DOCUMENT RESUME

ED 358 039 SP 034 329

| | |
|---|---|
| TITLE | AIDS Prevention through Education: Sample Curriculum. Elementary. |
| INSTITUTION | South Dakota State Dept. of Education and Cultural Affairs, Pierre. |
| PUB DATE | Nov 88 |
| NOTE | 241p.; For the sample secondary curriculum, see SP 034 330. Portions contain small print. |
| PUB TYPE | Guides - Non-Classroom Use (055) |
| EDRS PRICE | MF01/PC10 Plus Postage. |
| DESCRIPTORS | *Acquired Immune Deficiency Syndrome; Class Activities; Elementary Education; *Elementary School Curriculum; Health Activities; *Health Education; Health Promotion; Learning Activities; *Prevention; Program Development; Program Implementation; State Curriculum Guides; Worksheets |
| IDENTIFIERS | Age Appropriateness; South Dakota |

ABSTRACT

This sample curriculum guide has been developed to assist districts in planning and implementing an Acquired Immune Deficiency Syndrome (AIDS) education program. Classes are to be conducted within the context of comprehensive health education. This document, which provides K-6 guidelines, is organized into 8 sections: (1) purpose, planning, and implementation of an AIDS education program, and basic premises underlying AIDS education; (2) steps in the development and implementation of an AIDS education plan; (3) evaluation criteria; (4) South Dakota administrative rule on AIDS education; (5) South Dakota statute on moral instruction; (6) guidelines for effective school health education to prevent the spread of AIDS; (7) basic facts about Human Immunodeficiency Virus (HIV), including statistical tables; and (8) age appropriate sample curricula for K-6 students providing goals, expected outcomes, possible activities and worksheets. Also included is a copy of the Morbidity and Mortality Weekly Report, published by the Centers for Disease Control, entitled "Guidelines for Effective School Health Education to Prevent the Spread of AIDS." (LL)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

SP

# AIDS PREVENTION THROUGH EDUCATION

## SAMPLE CURRICULUM

## ELEMENTARY

ED358039

SP034329

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

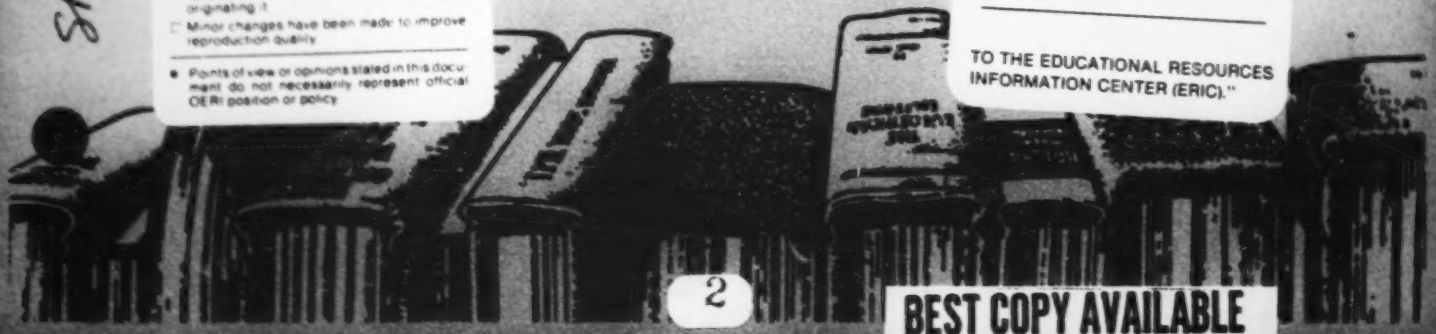
- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

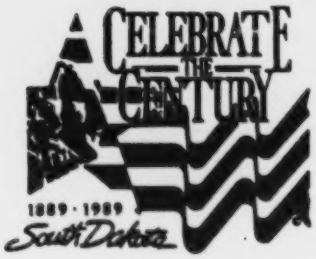
Marianne Carr

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."





BEST COPY AVAILABLE




DEPARTMENT OF EDUCATION AND CULTURAL AFFAIRS

October 26, 1988

Dear Colleague:

AIDS (Acquired Immune Deficiency Syndrome) is now pandemic in its proportions. At this time no cure or vaccine exists for this disease, and none is anticipated in the near future. Because the South Dakota Board of Education believes that education is virtually the only weapon at hand to combat the spread of the AIDS virus, it has mandated annual AIDS prevention education for students and staff in the K-12 schools of the state.

The South Dakota Board of Education, the South Dakota Division of Education and the Department of Health believe that the most effective AIDS prevention education occurs within the context of comprehensive health education and strongly encourage schools toward that end. However, education about AIDS should be provided as rapidly as possible, even if it is taught initially as a separate subject.

In response to the urgency of the situation, the Division of Education and the Department of Health have collaborated in the development of the enclosed draft of a suggested AIDS Prevention Through Education curriculum. The guidelines are non-regulatory, but are designed to assist districts in planning and implementing an AIDS education program.

We applaud your spirit of cooperation and willingness in getting this important effort underway during school year 1988-89. We hope you find the curriculum guidelines useful in your efforts to implement AIDS prevention education. If we can be of further assistance to you, please feel free to call Instructional Services at 773-4699.

Sincerely,

Henry G. Kosters, Ed.D.
State Superintendent of Education

HGK:KS:gc

enclosure

State Superintendent's Office
Division of Education, 700 Governors Drive, Pierre, SD 57501-2293 (605) 773-3243

# AIDS
# PREVENTION THROUGH EDUCATION

## SAMPLE CURRICULUM

A project of the

South Dakota Department of Education
and Cultural Affairs
Division of Education
AIDS Education
700 Governors Drive
Pierre, SD 57501-2291
(605)773-3261

Developed by the

South Dakota Department of Education
and Cultural Affairs
South Dakota Department of Health

November 1988

SOUTH DAKOTA DEPARTMENT OF EDUCATION AND CULTURAL AFFAIRS

South Dakota
Sample Curriculum
for
AIDS Prevention Through Education

TABLE OF CONTENTS


Page

Planning and Implementation.....1
- Purposes of an AIDS Education Program.....2
- Basic Premises Underlying AIDS Education.....3

Steps In process to Develop and Implement AIDS Education Plan.....4

Criteria for Evaluating an AIDS Education Program.....12

SD Administrative Rule on AIDS Education.....13

SD Statute on Moral Instruction.....13

Guidelines for Effective School Health Education to Prevent the Spread of AIDS.....14

Basic Facts about AIDS and HIV.....19

Sample AIDS Curriculum - Scope and Sequence.....34

Sample AIDS Curriculum
- Kindergarten.....36
- First Grade.....51
- Second Grade.....58
- Third Grade.....72
- Fourth Grade.....85
- Fifth Grade.....123
- Sixth Grade.....134

Glossary

# PLANNING AND IMPLEMENTING EFFECTIVE SCHOOL HEALTH EDUCATION ABOUT AIDS

South Dakota's public and private schools have the capacity and responsibility to help assure that young people understand the nature of the AIDS epidemic and the specific actions they can take to prevent HIV infection, especially during their adolescence and young adulthood. The specific scope and content of AIDS education in schools should be locally determined and should be consistent with parental and community values. **The school education effort is directed towards maintaining our state's enviable reputation as a low-incidence state. South Dakota does not have a high rate of AIDS infection — let us work together to preserve that status.**

Because AIDS is a fatal disease and because educating young people about becoming infected through sexual contact can be controversial, school systems should obtain broad community participation to ensure that school health education policies and programs to prevent the spread of AIDS are locally determined and are consistent with community values.

The development of school district policies on AIDS education can be an important first step in developing an AIDS education program. In each community, representatives of the school board, parents, school administrators and faculty, local medical personnel students, minority groups, religious organizations, and other relevant organizations can be involved in developing policies for school health education to prevent the spread of AIDS. The process of policy development can enable these representatives to resolve various perspectives and opinions, to establish a commitment for implementing and maintaining AIDS education programs, and to establish standards for AIDS education program activities and materials. Some communities already have school health committees that include representatives from the aforementioned groups. Such groups facilitate the development of a broad base of community expertise and input, and they enhance the coordination of various activities within the comprehensive school health program.

AIDS education programs should be developed to address the needs and the developmental levels of students and to address specific needs of minorities, persons for whom English is not the primary language, and persons with visual or hearing impairments or other learning disabilities. Plans for providing effective school health education about AIDS at each grade, including educational materials to be used, should be reviewed by representatives of the school board, appropriate school administrators, teachers, and parents before being implemented.

Education about AIDS may be most appropriate and effective when carried out within a comprehensive school health education program that establishes a foundation for understanding the relationships between personal behavior and health. For example, education about AIDS may be more effective when students at appropriate ages are more knowledgeable about sexually transmitted diseases, drug abuse, and community health. It may also have greater impact when they have opportunities to develop such qualities as decision-making and communication skills, resistance to persuasion, and a sense of self-efficacy and self-esteem. **However, education about AIDS should be provided as rapidly as possible, even if it is taught initially as a separate subject.**

**A sample scope-and-sequence is included in the appendices of this document.**

## PURPOSES OF AN AIDS EDUCATIONAL PROGRAM

**The Centers for Disease Control suggest these general guidelines as purposes of an AIDS education program:**

The principle purpose of education about AIDS is to prevent HIV infection. The content of AIDS education...should address the broad range of behavior exhibited by young people. Educational programs should assure that young people acquire the knowledge and skills they will need to adopt and maintain types of behavior that virtually eliminate their risk of becoming infected.

At the secondary level, school systems should make programs available that will enable and encourage young people who have not engaged in sexual intercourse and who have not used illicit drugs to continue to --

- Abstain from sexual intercourse until they are ready to establish a mutually monogamous relationship within the context of marriage.

- Refrain from using or injecting illicit drugs.

For young people who have engaged in sexual intercourse or who have injected illicit drugs, school programs should enable and encourage them to

- Stop engaging in sexual intercourse until they are ready to establish a mutually monogamous relationship within the context of marriage.

- Stop using or injecting illicit drugs.

Despite all efforts, some young people may remain unwilling to adopt behavior that would virtually eliminate their risk of becoming infected. Therefore, school systems, in consultation with parents and health officials, should provide AIDS education programs that address preventive types of behavior that should be practiced by those with an increased risk of HIV infection. These include:

- Avoiding sexual intercourse with anyone who is known to be infected or who is at risk of being infected or whose HIV infection status is not known.

- Using a latex condom with spermicide if they engage in sexual intercourse.

- Seeking treatment if addicted to illicit drugs.

- Not sharing needles or other injection equipment.

- Seeking HIV counseling and testing if HIV infection is suspected.

State and local education and health agencies should work together to assess the prevalence of these types of risk behavior, and their determinants, over time.

## BASIC PREMISES UNDERLYING AIDS EDUCATION

Teaching positive health behaviors such as self-esteem, respect for others, and decision making will help students understand the immediate and long-term benefits of abstaining from sexual activity and illegal drug use. The students' learning and practicing positive health behaviors will be as important to them as their acquisition of knowledge.

- AIDS instruction is a shared responsibility. Its success will depend upon the cooperation of all school personnel and the participation of the home and the community.

- For the immediate future, educators will be faced with the challenge of reaching secondary students who need to know about AIDS but who may have already taken their health education courses. These students, too, will need to receive AIDS instruction.

- Knowledge about AIDS is continuously changing. Reasonable means for updating the knowledge base of school personnel are a necessity for accurate instruction.

- AIDS instruction will require dealing with the concerns of some community members about addressing sensitive, personal, lifestyle issues in the classroom.

- Educators will need to provide for AIDS instruction that is age-appropriate, is consistent with community values, and stresses abstinence as the most appropriate and effective premarital protection against AIDS.

- Educators will need to address the challenge of teaching issues that involve moral decisions, values, and personal feelings.

## STEPS IN PROCESS TO DEVELOP AND IMPLEMENT AIDS EDUCATION PLAN

The process that a local school district follows to develop an AIDS instructional program is a crucial link between local needs and recommendations and requirements put forth by the State Board of Education. An effective process enables school districts to tailor the instructional program to the particular needs of their students and involve the community in ways that can best meet the educational goals.

Though the nature and content of AIDS instruction in schools require a larger and more diverse group to be involved in curriculum planning, and though the local board of education has ultimate authority to approve all programs, there are common procedures to be followed in the development of curriculum for any subject. The steps for undertaking this process for AIDS education are summarized below:

1. Designate an AIDS Advisory Council
2. Review current materials (State Board rule, Division of Education recommendations, related materials currently in use in district)
3. Conduct a needs assessment and establish priorities
4. Identify resources (school and community)
5. Develop an AIDS instructional philosophy
6. Develop an AIDS instructional program
7. Conduct community awareness activities
8. Conduct staff training
9. Implement the AIDS instructional program
10. Evaluate, update, and revise the program.

An AIDS education program deals with complex societal and personal values and issues; and discussion about an AIDS instructional program may touch on personal, religious, cultural, and moral perspectives. So initial and continuous communication on all aspects of the intended program are of the utmost importance. The process of developing an AIDS education program requires time, cooperation, and the participation of many people from the school, the home, and the community.

The 10 steps explained below are in keeping with the basic belief that schools are in partnership with parents and the community. The steps allow for and encourage the participation of many people before the board of education makes decisions about an AIDS education program, and for sharing information with many more after the plan is finalized and ready to implement.

1. Designate an AIDS Advisory Council

It is recommended that an AIDS Advisory Council be appointed, consisting of those who will be affected by the decisions to be made, specifically, school board members, district -wide and building-level administrators, health-related school personnel, elementary and secondary teachers, parents, students, representatives from religious organizations, and medical professionals. It is helpful to include a broad spectrum of the community and to establish specific reporting procedures for the AIDS Education Advisory Council.

Some kind of organizational structure needs to be established. This will vary, depending upon the size and complexity of the school district. It may be desirable to have subgroups for elementary and secondary levels. If so, it is essential to provide a means for regular communication between the two since the integration of the total curriculum is important.

Districts may want to assign the Advisory Council the responsibility of making recommendations along each of the steps in the process, or staff may seek recommendations concerning content, implementation, and evaluation of an AIDS instructional program. In either case, carrying out all steps in the program process will insure a comprehensive planning process.

2. Review Current Materials

A survey of current materials is essential. It is best to collect and make available for group discussion before the assigned task is undertaken. A collection of materials might include:

- State laws, regulations, and recommendations affecting curriculum;
- Previous local school board resolutions or recommendations regarding health education, AIDS education, substance abuse education, family life education, and related topics;
- The most recent information about AIDS prevention from health organizations (available from Communicable Disease Program, Pierre, and/or Division of Education, Pierre);
- All existing health education curricula used by the district for any grade level (including statements of philosophy);
- Any special AIDS-related projects carried out in the district thus far (speakers, films, brochures);
- Books and periodical literature pertaining to health, substance abuse, family life education, etc., included in teacher and/or student libraries in districts.

A review of existing health education materials and activities in the school district provides information about the health education program into which AIDS instruction will be integrated, as well as information about activities specifically related to AIDS.

3. Conduct a Needs Assessment and Establish Priorities

A needs assessment is a vital part of educational planning and evaluation

determination of what is presently in place and what must be done to reach the end desired--in this case, AIDS instruction. For AIDS instruction, there is a concern about specific problems, such as preventing the further spread of HIV infection, dealing with unwarranted fear about AIDS and its transmission, and promoting positive health behaviors for students.

The assessment of needs and resources is a crucial task. There are a number of ways to conduct this assessment, and a combination of procedures will most likely yield the most comprehensive results. For example:

a. Surveys

Surveys can reveal valuable information about how AIDS is perceived by a community, and can help identify school staff and members of the community who could be called upon to assist in further planning efforts.

Surveys can be conducted of:

- students
- faculty
- other school staff
- parents/guardians
- the community at large

Surveys may be used to gather information on:

- staff knowledge, needs, and interests related to AIDS education, substance abuse education, and family life education

- parent/guardian and community knowledge, attitudes and values regarding AIDS education, substance abuse education, and family life education

- student knowledge about AIDS.

Surveys should be accompanied by a cover letter that explains the planning effort of the school district and how the information will be used. For those with limited English proficiency, such a cover letter may need to be translated into native language.

b. Statistical Data

Statistical data that should be collected include:

- data on the magnitude of the AIDS problem and HIV infection

- data on the impact of this disease on social, medical, and financial institutions
- school and community data regarding child sexual abuse, substance abuse, adolescent pregnancy, etc.

- data on school problems such as absenteeism, suspensions, dropouts.

c. Community Awareness

Meetings should be held to inform the community that a concerted effort is being made to address the AIDS epidemic and to provide the community with a forum for discussing its concerns with respect to AIDS instruction. These concerns need to be incorporated within the data-gathering responsibility.

The district's needs assessment, once completed with items ranked according to priorities, provides the basis for instructional planning. The needs-assessment process is also an excellent method of creating awareness of the complementary roles of school, community, and parents/guardians in addressing this health crisis. Local data has far greater impact than national or state statistics.

4. Identify Resources (school and community)

Concurrent with conducting a needs assessment, resources within the school and community should be identified for AIDS instruction. It would be helpful to identify the:

- school personnel prepared to teach AIDS (health educators, school nurse-teachers, special education teachers, pupil personnel staff) and/or interested in being trained to teach AIDS;

- community resources available to assist existing instructional personnel with AIDS instruction (community AIDS organizations/specialists, religious organizations, public health offices, health care organizations, family planning agencies, local chapters of American Red Cross, substance abuse agencies, physicians, nurses);

- teaching materials available or needed to supplement AIDS instruction (audiovisual materials, print materials, existing curricula for health education, substance abuse education, and family life education).

5. Develop an AIDS Instructional Philosophy

The next step is the preparation of a statement of philosophy for AIDS instruction. The philosophy should be consistent with the philosophy of health education reflecting the specific needs and values of the school district, the students, and the community. This philosophy will guide the instructional program. It is recommended that the school district's instructional philosophy about AIDS stress positive values and behaviors in which students learn to:

- respect themselves and respect others

- value nurturing relationships which occur within families

- behave in ways that promote healthy growth and development

- behave in ways that reduce risk by avoiding acts which may bring harm or injury

- be responsible for their own behavior and its consequences

- abstain from sex, and understand that postponing sexual activity until adulthood increases one's positive life choices for career and marriage

- abstain from illegal drug use.

Instruction about AIDS is best provided within a context of positive teaching about health and personal responsibility.

6. Develop an AIDS Instructional Program

a. Select Objectives

In order to select grade-level objectives for AIDS instruction, it will be helpful to review the four concepts of AIDS education. The four concepts are:

- There are some diseases that are communicable diseases. AIDS is a communicable disease.

- There are decision-making and refusal skills to practice that will lead to a healthful lifestyle, and there are methods of prevention for AIDS.

- There are social and economic implications of AIDS.

- There are community resources for information, help, and counseling.

When deciding how these concepts (or other locally-selected concepts) will be addressed at each grade level, it will be necessary to consider whether or not similar objectives are already being addressed in the health education program. For example, students at the K-3 level may be learning how to establish good health practices (such as hand washing) in their daily routines. Students in grades 7-12 may be learning about the effects of alcohol, tobacco, and other drug substances. These objectives within health education can be used to introduce--and/or expanded to include--some of the objectives related to AIDS prevention.

In another example, lessons from a district's child abuse prevention program may be correlated to parts of the AIDS instructional program. Students may be at risk for exposure to AIDS through activities involving sexual abuse.

Elementary students also are learning about their responsibilities as members of families and communities, not only within the health education program but through other curriculum areas as well. For example, in social studies students learn about their role and that of others at home and at school, in safety education they learn about rules at home and at school, and in all subject areas they learn that they have responsibilities. These values can be built upon to help students understand responsibilities for self and others, thus building on the objectives for AIDS education taught in the health program.

A suggested scope-and-sequence is included in the appendices of this document.

b. Recommend Content, Methods, and Activities and Describe Behaviors Anticipated

Once the grade-level objectives have been determined for AIDS instruction it is necessary to delineate the specific content that will be introduced and/or reinforced to meet the objectives. It will also be necessary to decide on methods of introducing/reinforcing the content, the specific activities in which students will engage, materials to be used, and program evaluation techniques.

For example, the sample scope-and-sequence suggests that students in grade 5 will understand the body's reproductive system. One school district may determine that this is, indeed, appropriate content for students in grade 5. Another school district may determine that understanding the body's reproductive system is too sophisticated a topic for its students in grade 5 but would be appropriate for students in grade 6, and still another school district may determine that while the content is appropriate for students in grade 5, simpler language should be used.

The school district will decide what the anticipated behavior of students will be after instruction takes place. In the example given above, the positive health behavior anticipated is that "students will reduce their own exposure to infection." It is recommended that AIDS instruction occur in a classroom-sized setting (small group), with ample time allowed for questions and discussion. The nature of the content does not make a large group setting advisable.

The Divisions of Education and Health Services will provide a sample set of classroom activities as well as a listing of suggested classroom materials. This will be correlated to the sample scope-and-sequence included the appendices of this document.

c. Initial Field-Test of Curriculum

It is important to consider the first year as a "field-test" for classroom teachers and to provide an opportunity to share information that may improve the draft curriculum for the second and succeeding years.

d. Revise Curriculum

Revisions may need to be made to the curriculum based on the initial use and reviews by selected administrators and teachers. Later revisions may be necessary after the curriculum has been used by all teachers and other school staff who will need to review the content, as medical knowledge about AIDS changes and as the district learns from classroom experiences.

7. Conduct Community Awareness Activities

After initial awareness (see step 3C), specific instruction-related awareness is important, especially for parents and other interested community members.

Introducing new AIDS instruction to parents and community members before using the program with students is critical to gain support for the overall program and for successful implementation of the program in the classroom. It is essential to present a clear picture about the need for the instruction, the decision-making process used, the philosophy adopted, the goals and objectives to be used, and the content to be stressed. Parents and members of the community will need to be help up-to-date on the efforts being made to; a) incorporate AIDS instruction into the district's comprehensive health education program. This can be done through open housesin local school buildings/classrooms, evening informational sessions, parent newsletters and other communication methods a district may now have in place. Special outreach efforts should be made to reach parents not clearly associated with school activities or who may need information translated into their native language. Community-based organizations and religious organizations working and serving diverse parent constituencies can be helpful in this outreach effort.

Special note:

Parents will also need to know how to access materials from the school to assist them in providing their children with AIDS instruction should they desire to do this. Parents should also be informed of their right and the procedure to follow in accepting full responsibility for provision of their child's education in AIDS prevention. The school is advised to maintain a file of signed statements from parents who wish to be fully responsible for their child's AIDS education, and to provide classroom teachers with procedures and options for alternate location and activities.

It is suggested that the parents-accept-full-responsibility philosophy be utilized, versus a I-don't-want-my-child-to-receive-AIDS-instruction attitude. Schools are advised to prepare for a few situations of this nature in advance, rather than allow a single situation to inflame an entire community. A form to use with parents who want to accept full responsibility for their child's AIDS education is attached in the appendix.

8. Conduct Staff Training

In order to assure that AIDS instruction will be effective, comprehensive and ongoing, training must be provided for the staff. Accurate scientific information, a common framework for providing AIDS instruction, and grade-level objectives and implementation strategies are all essential elements to a successful instructional program. Teachers will need to increase competencies in working with the knowledge, skills, and attitudes required for AIDS instruction to reach a comfort-level which will be effective in the classroom.

The Division of Education and the Division of Public Health, Pierre, will implement a statewide training program for teachers and trainers (preferably health educators) during school-year 1988-89.

Funded by Centers for Disease Control, the program is designed to provide a base of AIDS educators statewide, but will not necessarily meet the needs of all districts, depending on the local AIDS education plan.

Details of the training program are included in the appendices of this document; districts are urged to study them carefully before making local plans for staff training.

It is recommended that AIDS instruction be taught by trained regular classroom teachers at the elementary level, and by trained health educators at the secondary level.

9. Implement the AIDS Instructional Program

Classroom teachers and other school personnel responsible for implementation will need assistance in the form of ongoing in-service and technical assistance. Regular feedback from those implementing the program is essential to determine if further revisions or clarifications to the AIDS instructional program are needed.

10. Evaluate, Update, and Revise the Program

Evaluation is the process by which a district identifies the effectiveness of the program. Evaluation will focus on the components of the program such as the objectives, the learner outcomes, and the suggested activities.

Evaluation methods for AIDS education are similar to those for health education and may include:

- observations
- anecdotal records
- objective pretests and posttests
- attitudinal inventories
- interviews
- surveys and questionnaires
- checklists
- health data analyses
- self-assessments
- teacher-developed tests.

The methods selected for a particular evaluation activity will vary according to the purpose of the task. In most instances, a combination of objective records and subjective judgments is used. When a variety of procedures are used and consistent patterns are observed, the evaluation is considered to be more reliable than when only one technique is used.

Evaluation is an ongoing process. Data should be gathered periodically and analyzed in relation to defined program objectives and outcomes. Program modifications should be made, as necessary, and training should be provided whenever program changes are made.

## SAMPLE CRITERIA FOR EVALUATING AN AIDS EDUCATION PROGRAM

- Are parents, students, health professionals, and appropriate community representatives involved in developing, field-testing, implementing, and assessing the program?

- Is the program implemented as an integral part of a comprehensive K-12 school health education program?

- If the district does not have a comprehensive health program, is a comprehensive AIDS education program implemented K-12?

- Does the program fairly represent the values and more of the community?

- Is the program clearly communicated to both staff and community?

- Is adequate training provided for those responsible for instruction about AIDS, including school administrators, teachers, nurses and counselors?

- Is the program taught by regular classroom teachers at the elementary level, and by teachers who are trained and qualified at the secondary level?

- Is the program designed to help teenage students recognize the need to avoid specific behaviors that increase the risk of contracting AIDS?

- Does the program describe the stress the benefits of abstinence for young people, and mutually monogamous relationships for adults?

- Is the program designed to help students acquire essential knowledge and skills to protect themselves from the risk of contracting AIDS if they are sexually active?

- Is the program designed to help students acquire essential knowledge and skills to protect themselves from becoming drug abusers or to protect themselves from the risk of contracting AIDS if they are drug abusers?

- Is the program sensitive to young people's stages of psycho-social development with careful attention to ethno-cultural differences among students?

- Are sufficient program development time, classroom time, and instructional materials provided for education about AIDS?

- Is someone assigned to monitor the most recent data to keep the program up to date with current developments?

- Is there adequate financial support to ensure continuation of the program?

- Is there a process established for conducting this evaluation?

## SOUTH DAKOTA BOARD OF EDUCATION
## ADMINISTRATIVE RULE ON AIDS EDUCATION

24:03:06:22. AIDS education plan. The local school board or governing body of each school system must approve and implement a comprehensive plan for effective education about acquired immunodeficiency syndrome (AIDS).

The plan must include AIDS instruction which is scientifically accurate, age-appropriate, and reflective of community values for all students in grades K-12 and for all employees of the school system. The plan must require annual instruction of students and employees. After the effective date of this amendment, the plan must include instruction which is intended to impress upon the mind of students the importance of sexual abstinence.

The local school board shall amend its comprehensive AIDS education plan to reflect the requirements of this section and shall submit the revised plan to the division of education by January 15, 1993. Thereafter, the local school board or governing body shall review, amend if desired or necessary, and reapprove the plan by September 15 of each school term the school system is scheduled for an on-site accreditation review. The AIDS education plan for students and employees must be available for review by the division of education and the department of health upon request.

Curriculum and materials for AIDS instruction shall be determined by the local school board or governing body in accordance with local curriculum development and textbook selection policies as required in subdivision 24:03:04:08(7).

In-service training for teachers and other school staff regarding AIDS instruction shall be determined by the local school board or governing body in accordance with local in-service and staff development policies as required in subdivision 24:03:04:08(13). (Revised August, 1992)

## *SOUTH DAKOTA STATUTE ON*
## *MORAL INSTRUCTION*

13-33-6. Moral instruction required - Promulgation of rules to prescribe a course of study. In addition to other courses, special moral and character instruction shall be given in all public and nonpublic elementary and secondary schools in the state that is intended to impress upon the minds of students the importance of truthfulness, temperance, purity, sexual abstinence, AIDS instruction, public spirit, patriotism, citizenship, respect for honest labor, obedience to parents, respect for the contributions of minority and ethnic groups to the heritage of South Dakota and due deference to old age.

The South Dakota board of Education shall promulgate rules pursuant to chapter 1-26 to prescribe a course of study for the instruction required by this section. (Revised February, 1992)

CENTERS FOR DISEASE CONTROL

January 29, 1988 / Vol. 37 / No. S-2

MMWR

*Supplement*

MORBIDITY AND MORTALITY WEEKLY REPORT

# Guidelines for Effective School Health Education To Prevent the Spread of AIDS

**U.S. Department of Health and Human Services**
**Public Health Service**
**Centers for Disease Control**
**Center for Health Promotion and Education**
**Atlanta, Georgia 30333**

Supplements to the *MMWR* are published by the Epidemiology Program Office, Centers for Disease Control, Public Health Service, U.S. Department of Health and Human Services, Atlanta, Georgia 30333.

**SUGGESTED CITATION**

Centers for Disease Control. Guidelines for Effective School Health Education To Prevent the Spread of AIDS. *MMWR* 1988;37 (suppl. no. S-2):[inclusive page numbers].

Centers for Disease Control ..... James O. Mason, M.D., Dr.P.H.
*Director*

Gary R. Noble, M.D.
*Deputy Director (AIDS)*

The material in this report was developed (in collaboration with the Center for Infectious Diseases and the Center for Prevention Services) by:

Center for Health Promotion and Education ..... Dennis D. Tolsma, M.P.H.
*Director*

Division of Health Education ..... Marshall W. Kreuter, Ph.D.
*Director*

Office of School Health and Special Projects ..... Lloyd J. Kolbe, Ph.D.
*Chief*

Jack T. Jones, M.P.H.
*Program Director, School Health Education To Prevent the Spread of AIDS*

Educational Resources Branch ..... Priscilla Holman, M.A.
*Chief*

Byron Breedlove, M.A.
*Editorial Services*

The production of this report as an *MMWR Supplement* was coordinated in:

Epidemiology Program Office ..... Carl W. Tyler, Jr., M.D.
*Director*

Michael B. Gregg, M.D.
*Editor, MMWR*

Editorial Services ..... R. Elliott Churchill, M.A.
*Chief*

Beverly Holland
*Editorial Assistant*



# Guidelines for Effective School Health Education To Prevent the Spread of AIDS

## Introduction

Since the first cases of acquired immunodeficiency syndrome (AIDS) were reported in the United States in 1981, the human immunodeficiency virus (HIV) that causes AIDS and other HIV-related diseases has precipitated an epidemic unprecedented in modern history. Because the virus is transmitted almost exclusively by behavior that individuals can modify, educational programs to influence relevant behavior can be effective in preventing the spread of HIV (*1-5*).

The guidelines below have been developed to help school personnel and others plan, implement, and evaluate educational efforts to prevent unnecessary morbidity and mortality associated with AIDS and other HIV-related illnesses. The guidelines incorporate principles for AIDS education that were developed by the President's Domestic Policy Council and approved by the President in 1987 (see Appendix I).

The guidelines provide information that should be considered by persons who are responsible for planning and implementing appropriate and effective strategies to teach young people about how to avoid HIV infection. These guidelines should not be construed as rules, but rather as a source of guidance. Although they specifically were developed to help school personnel, personnel from other organizations should consider these guidelines in planning and carrying out effective education about AIDS for youth who do not attend school and who may be at high risk of becoming infected. As they deliberate about the need for and content of AIDS education, educators, parents, and other concerned members of the community should consider the prevalence of behavior that increases the risk of HIV infection among young people in their communities. Information about the nature of the AIDS epidemic, and the extent to which young people engage in behavior that increases the risk of HIV infection, is presented in Appendix II.

Information contained in this document was developed by CDC in consultation with individuals appointed to represent the following organizations:

American Academy of Pediatrics
American Association of School Administrators
American Public Health Association
American School Health Association
Association for the Advancement of Health Education
Association of State and Territorial Health Officers
Council of Chief State School Officers
National Congress of Parents and Teachers
National Council of Churches

National Education Association
National School Boards Association
Society of State Directors of Health, Physical Education, Recreation and Dance
U.S. Department of Education
U.S. Food and Drug Administration
U.S. Office of Disease Prevention and Health Promotion

Consultants included a director of health education for a state department of education, a director of curriculum and instruction for a local education department, a health education teacher, a director of school health programs for a local school district, a director of a state health department, a deputy director of a local health department, and an expert in child and adolescent development.

## Planning and Implementing Effective School Health Education about AIDS

The Nation's public and private schools have the capacity and responsibility to help assure that young people understand the nature of the AIDS epidemic and the specific actions they can take to prevent HIV infection, especially during their adolescence and young adulthood. The specific scope and content of AIDS education in schools should be locally determined and should be consistent with parental and community values.

Because AIDS is a fatal disease and because educating young people about becoming infected through sexual contact can be controversial, school systems should obtain broad community participation to ensure that school health education policies and programs to prevent the spread of AIDS are locally determined and are consistent with community values.

The development of school district policies on AIDS education can be an important first step in developing an AIDS education program. In each community, representatives of the school board, parents, school administrators and faculty, school health services, local medical societies, the local health department, students, minority groups, religious organizations, and other relevant organizations can be involved in developing policies for school health education to prevent the spread of AIDS. The process of policy development can enable these representatives to resolve various perspectives and opinions, to establish a commitment for implementing and maintaining AIDS education programs, and to establish standards for AIDS education program activities and materials. Many communities already have school health councils that include representatives from the aforementioned groups. Such councils facilitate the development of a broad base of community expertise and input, and they enhance the coordination of various activities within the comprehensive school health program (6).

AIDS education programs should be developed to address the needs and the developmental levels of students and of school-age youth who do not attend school, and to address specific needs of minorities, persons for whom English is not the primary language, and persons with visual or hearing impairments or other learning disabilities. Plans for addressing students' questions or concerns about AIDS at the early elementary grades, as well as for providing effective school health education about AIDS in each grade from late elementary/middle school through junior high/senior high school, including educational materials to be used, should be reviewed by representatives of the school board, appropriate school administrators, teachers, and parents before being implemented.



Education about AIDS may be most appropriate and effective when carried out within a more comprehensive school health education program that establishes a foundation for understanding the relationships between personal behavior and health (7-9). For example, education about AIDS may be more effective when students at appropriate ages are more knowledgeable about sexually transmitted diseases, drug abuse, and community health. It may also have greater impact when they have opportunities to develop such qualities as decision-making and communication skills, resistance to persuasion, and a sense of self-efficacy and self-esteem. However, education about AIDS should be provided as rapidly as possible, even if it is taught initially as a separate subject.

State departments of education and health should work together to help local departments of education and health throughout the state collaboratively accomplish effective school health education about AIDS. Although all schools in a state should provide effective education about AIDS, priority should be given to areas with the highest reported incidence of AIDS cases.

## Preparation of Education Personnel

A team of representatives including the local school board, parent-teachers associations, school administrators, school physicians, school nurses, teachers, educational support personnel, school counselors, and other relevant school personnel should receive general training about a) the nature of the AIDS epidemic and means of controlling its spread, b) the role of the school in providing education to prevent transmission of HIV, c) methods and materials to accomplish effective programs of school health education about AIDS, and d) school policies for students and staff who may be infected. In addition, a team of school personnel responsible for teaching about AIDS should receive more specific training about AIDS education. All school personnel, especially those who teach about AIDS, periodically should receive continuing education about AIDS to assure that they have the most current information about means of controlling the epidemic, including up-to-date information about the most effective health education interventions available. State and local departments of education and health, as well as colleges of education, should assure that such in-service training is made available to all schools in the state as soon as possible and that continuing in-service and pre-service training is subsequently provided. The local school board should assure that release time is provided to enable school personnel to receive such in-service training.

## Programs Taught by Qualified Teachers

In the elementary grades, students generally have one regular classroom teacher. In these grades, education about AIDS should be provided by the regular classroom teacher because that person ideally should be trained and experienced in child development, age-appropriate teaching methods, child health, and elementary health education methods and materials. In addition, the elementary teacher usually is sensitive to normal variations in child development and aptitudes within a class. In the secondary grades, students generally have a different teacher for each subject. In

these grades, the secondary school health education teacher preferably should provide education about AIDS, because a qualified health education teacher will have training and experience in adolescent development, age-appropriate teaching methods, adolescent health, and secondary school health education methods and materials (including methods and materials for teaching about such topics as human sexuality, communicable diseases, and drug abuse). In secondary schools that do not have a qualified health education teacher, faculty with similar training and good rapport with students should be trained specifically to provide effective AIDS education.

## Purpose of Effective Education about AIDS

The principal purpose of education about AIDS is to prevent HIV infection. The content of AIDS education should be developed with the active involvement of parents and should address the broad range of behavior exhibited by young people. Educational programs should assure that young people acquire the knowledge and skills they will need to adopt and maintain types of behavior that virtually eliminate their risk of becoming infected.

School systems should make programs available that will enable and encourage young people who have not engaged in sexual intercourse and who have not used illicit drugs to continue to–

- Abstain from sexual intercourse until they are ready to establish a mutually monogamous relationship within the context of marriage;
- Refrain from using or injecting illicit drugs.

For young people who have engaged in sexual intercourse or who have injected illicit drugs, school programs should enable and encourage them to–

- Stop engaging in sexual intercourse until they are ready to establish a mutually monogamous relationship within the context of marriage;
- To stop using or injecting illicit drugs.

Despite all efforts, some young people may remain unwilling to adopt behavior that would virtually eliminate their risk of becoming infected. Therefore, school systems, in consultation with parents and health officials, should provide AIDS education programs that address preventive types of behavior that should be practiced by persons with an increased risk of acquiring HIV infection. These include:

- Avoiding sexual intercourse with anyone who is known to be infected, who is at risk of being infected, or whose HIV infection status is not known;
- Using a latex condom with spermicide if they engage in sexual intercourse;
- Seeking treatment if addicted to illicit drugs;
- Not sharing needles or other injection equipment;
- Seeking HIV counseling and testing if HIV infection is suspected.

State and local education and health agencies should work together to assess the prevalence of these types of risk behavior, and their determinants, over time.



## Content

Although information about the biology of the AIDS virus, the signs and symptoms of AIDS, and the social and economic costs of the epidemic might be of interest, such information is not the essential knowledge that students must acquire in order to prevent becoming infected with HIV. Similarly, a single film, lecture, or school assembly about AIDS will not be sufficient to assure that students develop the complex understanding and skills they will need to avoid becoming infected.

Schools should assure that students receive at least the essential information about AIDS, as summarized in sequence in the following pages, for each of three grade-level ranges. The exact grades at which students receive this essential information should be determined locally, in accord with community and parental values, and thus may vary from community to community. Because essential information for students at higher grades requires an understanding of information essential for students at lower grades, secondary school personnel will need to assure that students understand basic concepts before teaching more advanced information. Schools simultaneously should assure that students have opportunities to learn about emotional and social factors that influence types of behavior associated with HIV transmission.

### Early Elementary School

Education about AIDS for students in early elementary grades principally should be designed to allay excessive fears of the epidemic and of becoming infected.

*AIDS is a disease that is causing some adults to get very sick, but it does not commonly affect children.*

*AIDS is very hard to get. You cannot get it just by being near or touching someone who has it.*

*Scientists all over the world are working hard to find a way to stop people from getting AIDS and to cure those who have it.*

### Late Elementary/Middle School

Education about AIDS for students in late elementary/middle school grades should be designed with consideration for the following information.

*Viruses are living organisms too small to be seen by the unaided eye.*

*Viruses can be transmitted from an infected person to an uninfected person through various means.*

*Some viruses cause disease among people.*

*Persons who are infected with some viruses that cause disease may not have any signs or symptoms of disease.*

*AIDS (an abbreviation for acquired immunodeficiency syndrome) is caused by a virus that weakens the ability of infected individuals to fight off disease.*

*People who have AIDS often develop a rare type of severe pneumonia, a cancer called Kaposi's sarcoma, and certain other diseases that healthy people normally do not get.*

*About 1 to 1.5 million of the total population of approximately 240 million Americans currently are infected with the AIDS virus and consequently are capable of infecting others.*

*People who are infected with the AIDS virus live in every state in the United States and in most other countries of the world. Infected people live in cities as well as in suburbs, small towns, and rural areas. Although most infected people are adults, teenagers can also become infected. Females as well as males are infected. People of every race are infected, including whites, blacks, Hispanics, Native Americans, and Asian/Pacific Islanders.*

*The AIDS virus can be transmitted by sexual contact with an infected person; by using needles and other injection equipment that an infected person has used; and from an infected mother to her infant before or during birth.*

*A small number of doctors, nurses, and other medical personnel have been infected when they were directly exposed to infected blood.*

*It sometimes takes several years after becoming infected with the AIDS virus before symptoms of the disease appear. Thus, people who are infected with the virus can infect other people—even though the people who transmit the infection do not feel or look sick.*

*Most infected people who develop symptoms of AIDS only live about 2 years after their symptoms are diagnosed.*

*The AIDS virus cannot be caught by touching someone who is infected, by being in the same room with an infected person, or by donating blood.*

**Junior High/Senior High School**

Education about AIDS for students in junior high/senior high school grades should be developed and presented taking into consideration the following information.

*The virus that causes AIDS, and other health problems, is called human immunodeficiency virus, or HIV.*

*The risk of becoming infected with HIV can be virtually eliminated by not engaging in sexual activities and by not using illegal intravenous drugs.*

*Sexual transmission of HIV is not a threat to those uninfected individuals who engage in mutually monogamous sexual relations.*

*HIV may be transmitted in any of the following ways: a) by sexual contact with an infected person (penis/vagina, penis/rectum, mouth/vagina, mouth/penis, mouth/rectum); b) by using needles or other injection equipment that an infected person has used; c) from an infected mother to her infant before or during birth.*

*A small number of doctors, nurses, and other medical personnel have been infected when they were directly exposed to infected blood.*

*The following are at increased risk of having the virus that causes AIDS and consequently of being infectious: a) persons with clinical or laboratory evidence of infection; b) males who have had sexual intercourse with other males; c) persons who have injected illegal drugs; d) persons who have had numerous sexual partners, including male or female prostitutes; e) persons who received blood clotting products before 1985; f) sex partners of infected persons or persons at increased risk; and g) infants born to infected mothers.*



*The risk of becoming infected is increased by having a sexual partner who is at increased risk of having contracted the AIDS virus (as identified previously), practicing sexual behavior that results in the exchange of body fluids (i.e., semen, vaginal secretions, blood), and using unsterile needles or paraphernalia to inject drugs.*

*Although no transmission from deep, open-mouth (i.e., "French") kissing has been documented, such kissing theoretically could transmit HIV from an infected to an uninfected person through direct exposure of mucous membranes to infected blood or saliva.*

*In the past, medical use of blood, such as transfusing blood and treating hemophiliacs with blood clotting products, has caused some people to become infected with HIV. However, since 1985 all donated blood has been tested to determine whether it is infected with HIV; moreover, all blood clotting products have been made from screened plasma and have been heated to destroy any HIV that might remain in the concentrate. Thus, the risk of becoming infected with HIV from blood transfusions and from blood clotting products is virtually eliminated. Cases of HIV infection caused by these medical uses of blood will continue to be diagnosed, however, among people who were infected by these means before 1985.*

*Persons who continue to engage in sexual intercourse with persons who are at increased risk or whose infection status is unknown should use a latex condom (not natural membrane) to reduce the likelihood of becoming infected. The latex condom must be applied properly and used from start to finish for every sexual act. Although a latex condom does not provide 100% protection—because it is possible for the condom to leak, break, or slip off—it provides the best protection for people who do not maintain a mutually monogamous relationship with an uninfected partner. Additional protection may be obtained by using spermicides that seem active against HIV and other sexually transmitted organisms in conjunction with condoms.*

*Behavior that prevents exposure to HIV also may prevent unintended pregnancies and exposure to the organisms that cause* Chlamydia *infection, gonorrhea, herpes, human papillomavirus, and syphilis.*

*Persons who believe they may be infected with the AIDS virus should take precautions not to infect others and to seek counseling and antibody testing to determine whether they are infected. If persons are not infected, counseling and testing can relieve unnecessary anxiety and reinforce the need to adopt or continue practices that reduce the risk of infection. If persons are infected, they should: a) take precautions to protect sexual partners from becoming infected; b) advise previous and current sexual or drug-use partners to receive counseling and testing; c) take precautions against becoming pregnant; and d) seek medical care*

*and counseling about other medical problems that may result from a weakened immunologic system.*

*More detailed information about AIDS, including information about how to obtain counseling and testing for HIV, can be obtained by telephoning the AIDS National Hotline (toll free) at 800-342-2437; the Sexually Transmitted Diseases National Hotline (toll free) at 800-227-8922; or the appropriate state or local health department (the telephone number of which can be obtained by calling the local information operator).*

## Curriculum Time and Resources

Schools should allocate sufficient personnel time and resources to assure that policies and programs are developed and implemented with appropriate community involvement, curricula are well-planned and sequential, teachers are well-trained, and up-to-date teaching methods and materials about AIDS are available. In addition, it is crucial that sufficient classroom time be provided at each grade level to assure that students acquire essential knowledge appropriate for that grade level, and have time to ask questions and discuss issues raised by the information presented.

## Program Assessment

The criteria recommended in the foregoing "Guidelines for Effective School Health Education To Prevent the Spread of AIDS" are summarized in the following nine assessment criteria. Local school boards and administrators can assess the extent to which their programs are consistent with these guidelines by determining the extent to which their programs meet each point shown below. Personnel in state departments of education and health also can use these criteria to monitor the extent to which schools in the state are providing effective health education about AIDS.

1. To what extent are parents, teachers, students, and appropriate community representatives involved in developing, implementing, and assessing AIDS education policies and programs?
2. To what extent is the program included as an important part of a more comprehensive school health education program?
3. To what extent is the program taught by regular classroom teachers in elementary grades and by qualified health education teachers or other similarly trained personnel in secondary grades?
4. To what extent is the program designed to help students acquire essential knowledge to prevent HIV infection at each appropriate grade?
5. To what extent does the program describe the benefits of abstinence for young people and mutually monogamous relationships within the context of marriage for adults?
6. To what extent is the program designed to help teenage students avoid specific types of behavior that increase the risk of becoming infected with HIV?
7. To what extent is adequate training about AIDS provided for school administrators, teachers, nurses, and counselors—especially those who teach about AIDS?



8. To what extent are sufficient program development time, classroom time, and educational materials provided for education about AIDS?
9. To what extent are the processes and outcomes of AIDS education being monitored and periodically assessed?

*References*

1. US Public Health Service. Coolfont report: a PHS plan for prevention and control of AIDS and the AIDS virus. Public Health Rep 1986;101:341.
2. Institute of Medicine. National Academy of Sciences. Confronting AIDS: directions for public health, health care, and research. Washington, DC: National Academy Press, 1986.
3. US Department of Health and Human Services, Public Health Service. Surgeon General's report on acquired immune deficiency syndrome. Washington, DC: US Department of Health and Human Services, 1986.
4. US Public Health Service. AIDS: information/education plan to prevent and control AIDS in the United States, March 1987. Washington, DC: US Department of Health and Human Services, 1987.
5. US Department of Education. AIDS and the education of our children, a guide for parents and teachers, Washington, DC: US Department of Education, 1987.
6. Kolbe LJ, Iverson DC. Integrating school and community efforts to promote health: strategies, policies, and methods. Int J Health Educ 1983;2:40-47.
7. Nosk M. Recommendations for school health education. Denver: Education Commission of the States, 1982.
8. Comprehensive school health education as defined by the national professional school health education organizations. J Sch Health 1984;54:312-315.
9. Allensworth D, Kolbe L (eds). The comprehensive school health program: exploring an expanded concept. J Sch Health 1987;57:402-78.

# Appendix I

## The President's Domestic Policy Council's Principles for AIDS Education

The following principles were proposed by the Domestic Policy Council and approved by the President in 1987:

Despite intensive research efforts, prevention is the only effective AIDS control strategy at present. Thus, there should be an aggressive Federal effort in AIDS education.

The scope and content of the school portion of this AIDS education effort should be locally determined and should be consistent with parental values.

The Federal role should focus on developing and conveying accurate health information on AIDS to the educators and others, not mandating a specific school curriculum on this subject, and trusting the American people to use this information in a manner appropriate to their community's needs.

Any health information developed by the Federal Government that will be used for education should encourage responsible sexual behavior—based on fidelity, commitment, and maturity, placing sexuality within the context of marriage.

Any health information provided by the Federal Government that might be used in schools should teach that children should not engage in sex and should be used with the consent and involvement of parents.

# Appendix II

## The Extent of AIDS and Indicators of Adolescent Risk

Since the first cases of acquired immunodeficiency syndrome (AIDS) were reported in the United States in 1981, the human immunodeficiency virus (HIV) that causes AIDS and other HIV-related diseases has precipitated an epidemic unprecedented in modern history. Although in 1985, fewer than 60% of AIDS cases in the United States were reported among persons residing outside New York City and San Francisco, by 1991 more than 80% of the cases will be reported from other localities (*1*).

It has been estimated that from 1 to 1.5 million persons in the United States are infected with HIV (*1*), and, because there is no cure, infected persons are potentially capable of infecting others indefinitely. It has been predicted that 20%-30% of individuals currently infected will develop AIDS by the end of 1991 (*1*). Fifty percent of those diagnosed as having AIDS have not survived for more than about 1.6 years beyond diagnosis, and only about 12% have survived for more than 3 years (*2*).

By the end of 1987, about 50,000 persons in the United States had been diagnosed as having AIDS, and about 28,000 had died from the disease (*2*). Blacks and Hispanics, who make up about 12% and 6% of the U.S. population, respectively, disproportionately have contracted 25% and 14% of all reported AIDS cases (*3*). It has been estimated that during 1991, 74,000 cases of AIDS will be diagnosed, and 54,000 persons will die from the disease. By the end of that year, the total number of deaths caused by AIDS will be about 179,000 (*1*). In addition, health care and supportive services for the 145,000 persons projected to be living with AIDS in that year will cost our Nation an estimated $8-$10 billion in 1991 alone (*1*). The World Health Organization projects that by 1991, 50-100 million persons may be infected worldwide (*4*). The magnitude and seriousness of this epidemic requires a systematic and concerted response from almost every institution in our society.

A vaccine to prevent transmission of the virus is not expected to be developed before the next decade, and its use would not affect the number of persons already infected by that time. A safe and effective antiviral agent to treat those infected is not expected to be available for general use within the next several years. The Centers for Disease Control (*5*), the National Academy of Sciences (*6*), the Surgeon General of the United States (*7*), and the U.S. Department of Education (*8*) have noted that in the absence of a vaccine or therapy, educating individuals about actions they can take to protect themselves from becoming infected is the most effective means available for controlling the epidemic. Because the virus is transmitted almost exclusively as a result of behavior individuals can modify (e.g., by having sexual contact with an infected person or by sharing intravenous drug paraphernalia with an infected person), educational programs designed to influence relevant types of behavior can be effective in controlling the epidemic.

A significant number of teenagers engage in behavior that increases their risk of becoming infected with HIV. The percentage of metropolitan teenage girls who had ever had sexual intercourse increased from 30%-45% between 1971 and 1982. The average age at first intercourse for females remained at approximately 16.2 years between 1971 and 1979 (*9*). The average proportion of never-married teenagers who have ever had intercourse increases with age from 14 through 19 years. In 1982, the percentage of never-married girls who reported having engaged in sexual intercourse was as follows: approximately 6% among 14-year-olds (*10*), 18% among 15-year-olds, 29% among 16-year-olds, 40% among 17-year-olds, 54% among 18-year-olds, and 66% among 19-year-olds (*11*). Among never-married boys living in metropolitan areas, the percentage who reported having engaged in sexual intercourse was as follows: 24% among 14-year-olds, 35% among 15-year-olds, 45% among 16-year olds, 56% among 17-year-olds, 66% among 18-year olds, and 78% among 19-year olds (*9,12*). Rates of sexual experience (e.g., percentage having had intercourse) are higher for black teenagers than for white teenagers at every age and for both sexes (*11,12*).

Male homosexual intercourse is an important risk factor for HIV infection. In one survey conducted in 1973, 5% of 13- to 15-year-old boys and 17% of 16- to 19-year-old boys reported having had at least one homosexual experience. Of those who reported having had such an experience, most (56%) indicated that the first homosexual experience had occurred when they were 11 or 12 years old. Two percent reported that they currently engaged in homosexual activity (*13*).

Another indicator of high-risk behavior among teenagers is the number of cases of sexually transmitted diseases they contract. Approximately 2.5 million teenagers are affected with a sexually transmitted disease each year (*14*).

Some teenagers also are at risk of becoming infected with HIV through illicit intravenous drug use. Findings from a national survey conducted in 1986 of nearly 130 high schools indicated that although overall illicit drug use seems to be declining slowly among high school seniors, about 1% of seniors reported having used heroin and 13% reported having used cocaine within the previous year (*15*). The number of seniors who injected each of these drugs is not known.

Only 1% of all the persons diagnosed as having AIDS have been under age 20 (*2*); most persons in this group had been infected by transfusion or perinatal transmission. However, about 21% of all the persons diagnosed as having AIDS have been 20-29 years of age. Given the long incubation period between HIV infection and symptoms that lead to AIDS diagnosis (3 to 5 years or more), some fraction of those in the 20- to 29-year-age group diagnosed as having AIDS were probably infected while they were still teenagers.

Among military recruits screened in the period October 1985-December 1986, the HIV seroprevalence rate for persons 17-20 years of age (0.8/1,000) was about half the rate for recruits in all age groups (1.5/1,000) (*16*). These data have lead some to conclude that teenagers and young adults have an appreciable risk of infection and that the risk may be relatively constant and cumulative (*17*).

Reducing the risk of HIV infection among teenagers is important not only for their well-being but also for the children they might produce. The birth rate for U.S. teenagers is among the highest in the developed world (*18*); in 1984, this group accounted for more than 1 million pregnancies. During that year the rate of pregnancy among sexually active teenage girls 15-19 years of age was 233/1,000 girls (*19*).

Although teenagers are at risk of becoming infected with and transmitting the AIDS virus as they become sexually active, studies have shown that they do not believe they are likely to become infected (*20,21*). Indeed, a random sample of 860 teenagers (ages 16-19) in Massachusetts revealed that, although 70% reported they were sexually active (having sexual intercourse or other sexual contact), only 15% of this group reported changing their sexual behavior because of concern about contracting AIDS. Only 20% of those who changed their behavior selected effective methods such as abstinence or use of condoms (*20*). Most teenagers indicated that they want more information about AIDS (*20,21*).

Most adult Americans recognize the early age at which youth need to be advised about how to protect themselves from becoming infected with HIV and recognize that the schools can play an important role in providing such education. When asked in a November 1986 nationwide poll whether children should be taught about AIDS in school, 83% of Americans agreed, 10% disagreed, and 7% were not sure (*22*). According to information gathered by the United States Conference of Mayors in December of 1986, 40 of the Nation's 73 largest school districts were providing education about AIDS, and 24 more were planning such education (*23*). Of the districts that offered AIDS education, 63% provided it in 7th grade, 80% provided it in 9th grade, and 90% provided it in 10th grade. Ninety-eight percent provided medical facts about AIDS, 78% mentioned abstinence as a means of avoiding infection, and 70% addressed the issues of avoiding high-risk sexual activities, selecting sexual partners, and using condoms. Data collected by the National Association of State Boards of Education in the summer of 1987 indicated that a) 15 states had mandated comprehensive school health education; eight had mandated AIDS education; b) 12 had legislation pending on AIDS education, and six had state board of education





actions pending; c) 17 had developed curricula for AIDS education, and seven more were developing such materials; and d) 40 had developed policies on admitting students with AIDS to school (*24*).

The Nation's system of public and private schools has a strategic role to play in assuring that young people understand the nature of the epidemic they face and the specific actions they can take to protect themselves from becoming infected—especially during their adolescence and young adulthood. In 1984, 96% of 14 and 15 year-olds, 92% of 16 and 17 year-olds, and 50% of 18 and 19 year-olds were in school (*25*). In that same year, about 615,000 14- to 17-year-olds and 1.1 million 18- to 19-year-olds were not enrolled in school and had not completed high school (*26*).

*References*


1. US Public Health Service. Coolfont report: a PHS plan for prevention and control of AIDS and the AIDS virus. Public Health Rep 1986;101:341.
2. CDC. Acquired immunodeficiency syndrome (AIDS) weekly surveillance report—United States. Cases reported to CDC. December 28, 1987.
3. CDC. Acquired immunodeficiency syndrome (AIDS) among blacks and Hispanics—United States. MMWR 1986;35:655-8, 663-8.
4. World Health Organization. Special program on AIDS: strategies and structure projected needs. Geneva: World Health Organization, 1987.
5. CDC. Results of a Gallup Poll on acquired immunodeficiency syndrome—New York City, United States. MMWR 1985;34:513-4.
6. Institute of Medicine. National Academy of Sciences. Confronting AIDS: directions for public health, health care, and research. Washington, DC: National Academy Press, 1986.
7. US Department of Health and Human Services, Public Health Service. Surgeon General's report on acquired immune deficiency syndrome. Washington, DC: US Department of Health and Human Services, 1986.
8. US Department of Education. AIDS and the education of our children, a guide for parents and teachers. Washington, DC: US Department of Education, 1987.
9. Zelnick M, Kantner JF. Sexual activity, contraceptive use, and pregnancy among metropolitan-area teenagers: 1971-1979. Fam Plann Perspect 1980;12:230-7.
10. Hofferth SL, Kahn J, Baldwin W. Premarital sexual activity among United States teenage women over the past three decades. Fam Plann Perspect 1987;19:46-53.
11. Pratt WF, Mosher WD, Bachrach CA, et al. Understanding US fertility: findings from the National Survey of Family Growth, cycle III. Popul Bull 1984;39:1-42.
12. Teenage pregnancy: the problem that hasn't gone away. Tables and References. New York: The Alan Guttmacher Institute. June 1981.
13. Sorensen RC. Adolescent sexuality in contemporary America. New York, World Publishing, 1973.
14. Division of Sexually Transmitted Diseases, Annual Report, FY 1986. Center for Prevention Services, Centers for Disease Control, US Public Health Service, 1987.
15. Johnston LD, Bachman JG, O'Malley PM. Drug use among American high school students, college, and other young adults: national trends through 1986. Rockville, Md: National Institute on Drug Abuse, 1987.
16. CDC. Trends in human immunodeficiency virus infection among civilian applicants for military service—United States, October 1985-December 1986. MMWR 1987;36:273-6.
17. Burke DS, Brundage JF, Herbold JR, et al. Human immunodeficiency virus infections among civilian applicants for United States military service, October 1985 to March 1986. N Engl J Med 1987;317:131-6.
18. Jones EF, Forrest JD, Goldman N, et al. Teenage pregnancy in developed countries: determinants and policy implications. Fam Plann Perspect 1985;17:53-63.
19. National Research Council. Risking the future: adolescent sexuality, pregnancy, and childbearing (vol. 1). Washington, DC: National Academy Press, 1987.
20. Strunin L, Hingson R. Acquired immunodeficiency syndrome and adolescents: knowledge, beliefs, attitudes, and behaviors. Pediatrics 1987;79:825-8.

21. DiClemente RJ, Zorn J, Temoshok L. Adolescents and AIDS: a survey of knowledge, attitudes, and beliefs about AIDS in San Francisco. Am J Public Health 1986;76:1443-5.
22. Yankelovich Clancy Shulman. Memorandum to all data users from Hal Quinley about Time/Yankelovich Clancy Shulman Poll findings on sex education, November 17, 1986. New York City: Yankelovich Clancy Shulman, 1986.
23. United States Conference of Mayors. Local school districts active in AIDS education. AIDS Information Exchange 1987;4:1-10.
24. Cashman J. Personal communication on September 8, 1987, about the National Association of State Boards of Education survey of state AIDS-related policies and legislation. Washington, DC: National Association of State Boards of Education.
25. US Department of Commerce, Bureau of the Census. Statistical abstract of the United States, 105th ed. Washington, DC: US Department of Commerce, 1985.
26. US Department of Commerce, Bureau of the Census. School enrollment—social and economic characteristics of students: October 1984. Current Population Reports. Washington, DC: US Department of Commerce, 1985 (Series P-20, No. 404).

☆U.S. Government Printing Office: 1988-530-111/60055 Region IV

DEPARTMENT OF
HEALTH & HUMAN SERVICES
Public Health Service
Centers for Disease Control
Atlanta, GA 30333

Official Business
Penalty for Private Use $300

FIRST-CLASS MAIL
POSTAGE & FEES PAID
PHS/CDC
Permit No. G-284

BEST COPY AVAILABLE

HHS Publication No. (CDC) 88-8017

Redistribution using ink is illegal.

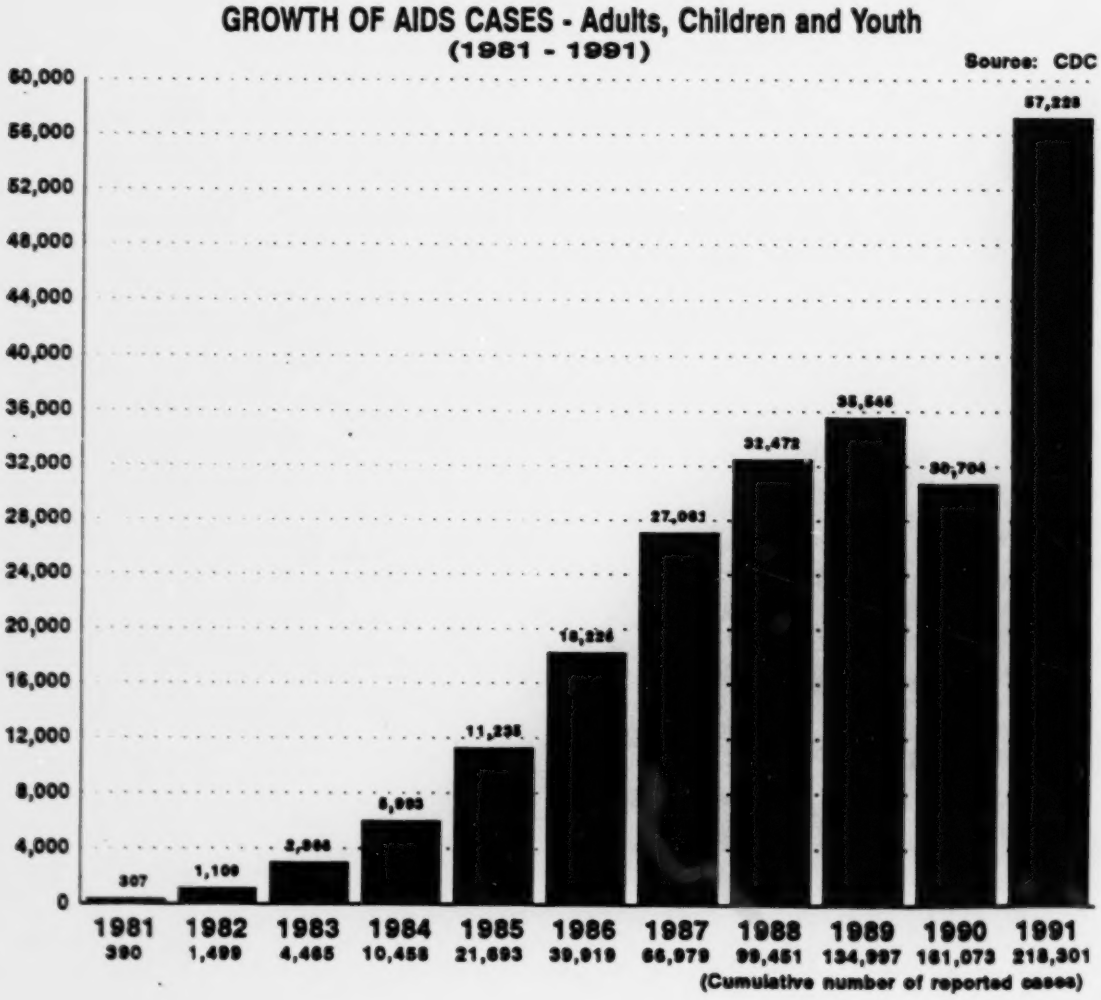
# BASIC FACTS ABOUT AIDS AND HIV

**HISTORY AND SPREAD OF AIDS CASES**

Between February and May 1981, the Centers for Disease Control (CDC) received 11 separate requests for pentamidine, medication used to treat a rare form of pneumonia, heretofore unknown in young, otherwise healthy males. The requests came from a physician in Los Angeles and a physician in New York who were both treating homosexual men afflicted with Pneumocystis carinii pneumonia (PCP). At that time physicians could only obtain pentamidine through special requests to the CDC. The woman who took the requests for pentamidine realized that this was a new disease.

Although AIDS is a relatively new disease, researchers have made significant advances in understanding its epidemiology and ways to prevent its spread. Unfortunately, AIDS cases have multiplied rapidly during the first decade of the disease and CDC predicts that by the end of 1993, there will be a cumulative total of 375,000 to 457,000 cases of AIDS in the United States. (See Figure 1) These predictions are uncertain because HIV Disease researchers do not know the extent or duration; of drug therapies that treat or seem to delay AIDS.

## Figure 1






36

Since 1987, the rate of increase of new AIDS cases has slowed. This trend has been attributed to several factors including the following:

...A decline in the incidence of new HIV infections among homosexual men in the early 1980s, leading to a subsequent decline in the incidence of reported AIDS cases;

...The use of anti-retroviral and other types of therapy by mid-1987, leading to a lengthening of the incubation period from the acquisition of HIV infection to the presence of symptoms of AIDS; and

...Possible decreases in the completeness or timeliness of AIDS case reporting.

Such early "epicenters" as New York City and San Francisco have already suffered the peak impact from the epidemic. Their rate of new cases is leveling off compared to previous years. Still, the devastation of the epidemic continues to play itself out in AIDS diagnoses and deaths exceeding 1,000 in these cities each year. Moreover, in other areas where the epidemic is less "mature" (e.g., Tennessee, Mississippi), we are currently witnessing an annual doubling, tripling, or greater increase in new cases.

As the number of AIDS cases increases, so does the impact on society. The afflicted, primarily aged 30-39, are the very group on whom our society depends for health and productivity. The disease, when it reaches the end stage known as AIDS, is thoroughly devastating, medically bankrupting, and fatal. (Absent effective treatment, and mortality rate still exceeds 58% overall, 85% three to five years post-diagnosis of AIDS.)

It should be noted that, like any reporting system, AIDS surveillance is subject to the pitfalls of case identification, diagnosis, and report generation and processing. Such problems as time lags from diagnosis to release of data by the CDC are endemic to the system, and difficulties in detecting and/or diagnosing persons not well served by the health care system (like IV drug users, women) may be assumed to skew the epidemiological picture.

## AIDS AND YOUNG PEOPLE

Like adults, young Americans have also been stricken by the recent AIDS epidemic. By December 31, 1991, there were 3,471 infant/child (the majority were under 5 years of age) and 734 teenage cases of AIDS reported to CDC.

There are different epidemiological patterns of the disease depending on the race/ethnicity of the young person. An alarming majority of AIDS cases aged five or younger are black and Hispanic children for whom HIV was transmitted through their infected mothers during pregnancy or birth. Most of these mothers were either intravenous drug users or sexual partners of drug users. By contrast, more than two-thirds of the pre-adolescent cases (ages 5-12) and about one-half of the teenage cases (ages 13-19) are white youths. The number of AIDS cases reported to CDC on Pacific Island and Native American youth is relatively small, totaling less than two percent of all cases as of December 31, 1991.

Without the intervention of youth services professionals and other concerned adults, the current toll of the AIDS epidemic upon young Americans will continue to increase. These statistics do not reflect the untold majority of youths who are HIV+, but are not yet exhibiting any clinical signs of AIDS and have not had reason to be tested.

## THE IMMUNE SYSTEM AND HIV

**Infectious Diseases** - Our bodies harbor and are constantly surrounded by numerous tiny living organisms, most of which are harmless; some are even beneficial to humans. A few, however, cause disease if they invade our bodies. These harmful micro-organisms are called "pathogenic" organisms.

All of these disease-causing bacteria or viruses are also "infectious," meaning they can be transmitted from one person to another in various ways, including through skin contact, through contaminated food or other products, by airborne particles, by animal or insect bites, or through sexual contact. Different bacteria and viruses have different modes of transmission.

**Viruses** - Viruses live and reproduce within living cells. They are made up of a protein coat--or envelope--over a string of genes. Each type of virus is keyed to receptors on the surfaces of different types of cells. Only certain human body cells are susceptible to any specific viral invader. Some types of enteric viruses, for example, seek out cells in the gastrointestinal tract, while cold viruses attack upper respiratory cells.

Because viruses invade living cells to reproduce themselves, it is difficult to kill them with drugs without also harming the cells where they have hidden. Treatment for viral infection has, until very recently, usually been limited to remedies for symptoms or complications. Viruses are responsible for many very common ailments, including mumps, measles, chicken pox, shingles, herpes, mononucleosis, colds/flu, viral meningitis, and hepatitis.

**The Body's Defense Systems** - The human body has a variety of mechanisms to protect itself against foreign invaders--also called "antigens."

...The skin is a primary defense, and the sweat glands that bathe it also contain some antiseptic properties.

...Most natural body openings also contain defenses--germ-fighting or repelling substances in tears, saliva, and mucous membranes.

...Other body parts such as the tonsils, lymph nodes, liver, or stomach trap and attack or filter out undesirable foreign matter.

...The body's lymph system also contains white blood cells that can identify, attack, and destroy or neutralize invading organisms.

**Major Actors in the Immune System**

The major actors in this internal defense network are two types of white blood lymphocytes and some other derivatives of cells that originate in bone marrow.

...Macrophage are scavenger cells that sometimes assist the defense system by engulfing invading viruses, breaking down their protein coats, and displaying their properties, thus helping other defense troops to recognize the invader. In the "Army Analogy," the macrophage is the scout, sentry, or lookout.

...T-4 Helper/Inducer Cells are the essential commanders, or generals, of the defense system, directing the action of other T-cells and the B-cells. Their collaboration is vital to the immune system because they interact with and regulate this very complex immune response by manufacturing and releasing chemical messengers. Once the general of the army has been kidnapped, opportunistic invaders such as Pneumocystis carinii can find a hospitable environment in which to proliferate, as the T-4 cells would be unable to call out the B plasma cells, or foot soldiers.

...B cells also recognize infectious viruses when they first enter the body while they are in a "free" state before they invade other body cells. When called into action, B cells multiply and divide into two subtypes. The B plasma, or "footsoldier," cells secrete specifically manufactured protein "antibodies" that bind to the recognized foreign protein or sugar molecules (antigens) and inactivate them.

...B Memory Cells live longer and are the source of further immunity to any recurring attack by the same antigen.

...T-8 Cytotoxic ("Killer") Cells, known as the "cleanup crew/bugle corps," when called into action by the T-4 cells, actively destroy cells that have been invaded or mutated. Later when the T-cells determine that it is safe to do so, the T-8 suppressor cells are summoned to shut down the attack response.

**The Normal Immune Reaction to Viruses**

In a normal immune response to a viral invasion:

...Viruses enter the body.

...Macrophages recognize the invaders and move in to immobilize them, break them down, and display their protein properties.

...Macrophages and other antigen-presenting cells send signals to the T-cells that can set the second line of defense into motion.

...The T-4 cells collaborate with the B-cells that have also recognized antigens. The T-4 cells stimulate the B-cells to mature into plasma cells that secrete antibodies for inactivating the invading antigens and memory cells that will recognize the invader in the future.

...The T-4 cells also send in the T-8 cells to kill off all the infected cells that display viral antigen and then turn off the defense system when the battle is over.

**SPECIAL CHARACTERISTICS OF HIV**

HIV combines a number of special characteristics that make it a particularly formidable invader defying our attempts to develop effective vaccines and/or treatment post-infection.


BEST COPY AVAILABLE

Affinity for Key Immune Systems Cells

HIV, like all viruses, is a parasite that seeks out particular cells in the body for invasion in order to reproduce itself. Unfortunately, the special targets of HIV are the macrophages, the T-4 cells (or generals, which are "kidnapped" and "brainwashed" as they replicate as infected HIV cells), and, to a less critical extent, B-cells and certain brain cells.

As a result, a number of functional defects occur in the immune response. The macrophages and T-4 cells are not as responsive to identified antigens and decrease production of the vital chemical messengers that direct other lymphocyte and selected cellular activity. The B-cells are more spontaneously active but produce fewer specific antibodies and lose their responsiveness to ordinary signals; and the killer cells are less effective. The immune system is thus disrupted.

One early identified result of this disruption is the ineffectiveness of HIV-specific antibodies. The reasons for the failure of this mainline defense in the instance of HIV infection are still under investigation. One of the prevailing theories suggests that the affinity between the chemical code on the HIV envelope and the receptor site on T-4 cells is so strong that envelope antibodies are simply not equal to the task.

Of increasingly recognized importance is HIV's effect on macrophages, which is to apparently pervert these cells' scavenger role. That is, after identifying and engulfing HIV in much the typical fashion, the macrophages fail to perform their function of breaking down and displaying the virus to alert the rest of the system. Rather, they hold HIV in reservoir, camouflaging its presence from antibodies and other attack cells, transporting it intact around the body (including across the blood-brain barrier), and secreting HIV-directed chemicals that are destructive to other cells.

HIV also causes considerable system-wide damage by targeting T-4 cells. Although it does not attack T-4 cells directly to any great extent, HIV's activity eventually causes T-4 cells to clump together and die. As this happens, the ratio of T-4s to T-8s changes. In healthy people, the number of T-4 cells is greater than the number of T-8 cells, but this reverses in HIV-infected persons. It is this dramatic imbalance that is believed to lay the immune system open to devastation by the legion of otherwise manageable opportunistic infections and cancers.

Permanent Installation

HIV is a retrovirus, which, once it sheds its protein coat inside the T cell, uses a reverse transcriptase enzyme to translate its own genetic program (RNA--ribonucleic acid) into the T-4 cells' DNA--deoxyribonucleic acid. It is then permanently incorporated into human genetic material and can begin reproducing viral RNA and proteins to form new viral particles that are released by "budding" through the invaded cell's membrane (as in T-4 cells) or within the cell (as in macrophages).

Long, Uncertain Incubation Period

HIV has been classified as a member of the lentivirus subgroup of retroviruses, which has a number of implications for the development of symptomatic disease. Following initial viremia (established infection in the blood) and acute (often unnoticed) onset symptoms, this group of viruses has a very long latency period, and HIV can apparently remain dormant for years--or even for life. An HIV infected "carrier" may appear completely healthy but, at the same time, is most likely infectious, or capable of spreading the virus to other persons through sexual activity and by certain drug practices.

In fact, and HIV-infected person may be only intermittently infectious--shedding the virus--while the virus is in the latent state. Recent research suggests that the individual is most infectious in the several months just prior to symptom development--precisely when there are no overt "markers" of infection that may have occurred years earlier.

Rapid Reproduction and Destruction Once Activated

HIV carries a special gene--called transactivation--as part of its retroviruses RNA. This gene can adjust the production of new viruses by the infected cell at heretofore unheard of levels, probably 20 times faster than flu virus and 100 times faster than the invaded cells can reproduce. Scientists think this response may either be released spontaneously or activated by another immune system challenge to the T-4 cells. When activated by this tat III--or chemical switch--after a period of dormancy, HIV spreads rapidly to infect other T-4 cells in the immune system. This rapid reproductive process destroys the body's main defense system.

The length of the latency period before manifestation of clinical symptoms and the rapidity of disease development may be influenced significantly by the health of the infected carrier. HIV may remain relatively dormant until invaded cells are activated by the invasion of other antigens, which we shall examine below. Each new infection or invasion may debilitate the system and/or cause more viral spread and



BEST COPY AVAILABLE

more "viral load" in the system. A final "last straw" infection may then activate the multiplier genes in the HIV: Rapid proliferation of viruses depletes the whole and/or what remains of the--immune system.

**FREQUENT MUTATIONS**

HIV's reverse transcriptase is, relatively speaking, quite inaccurate at translating the viral RNA. As a result, given its rapid reproduction once activated, HIV also mutates rapidly--at a rate estimated to be 100 to 1,000 times greater than flu virus. This mutation can occur both within an infected individual (with as yet unknown implications) and among "pools" of infected persons. At least 100 variants--20 strains--of HIV have been isolated regionally, and a sufficiently different form has established itself in West Africa to warrant dubbing as HIV-2 (recently documented in New Jersey in the AIDS-related death of a West African immigrant). This characteristic, called antigenic drift, confounds serological testing for antibodies, may help different strains of the virus evade the antibody defense, and defies vaccine development as well--since all of these processes involve detection of a biochemically specific entity.

**Inability of HIV-Specific Antibodies To Destroy or Inactivate HIV**

HIV-specific antibodies apparently have no impact on HIV. The antibodies are ineffective against HIV and fail to inactivate or destroy the virus.

**Modes of HIV Transmission**

How does infection with HIV occur? Not everyone who comes into direct contact with HIV becomes infected, just as flu does not occur from every exposure to that virus, even if prior immunity to a particular strain is not present. Here, the differentiation is between:

...Infection--meaning a virus has actually entered the body and invaded a living cell and begun to multiply, and

...Exposure--meaning there was only an opportunity for such invasion.

**The Modes of Transmission**

The infectiousness of HIV may be thought of as the inverse of its deadliness. That is, it is an extremely delicate virus, readily inactivated by standard disinfecting procedures, and only transmitted among humans in three extremely limited ways:

...Through parenteral injection of contaminated blood or blood products--In IV "works"-sharing among drug users, during injection of steroids, during blood transfusions and hemophilia treatments, by unsterile instruments used for procedures like tattooing, and through mishandling of health care operations resulting in such accidents as needle-sticks;

...Through sexual contact in which there is exchange of certain infected body fluids--Between males, from male to female, and from female to male (with female-female cases being extremely rare), primarily during unprotected anal, oral or vaginal intercourse with an HIV-infected individual; and

...From infected mothers to babies--In the uterus before birth, during the birth process, or (less frequently) through breast milk while nursing.

As public health officials sum it up, the transmission modes are blood exchange, sex, and birth. Primary prevention--that which is aimed at preventing transmission of HIV--is, therefore, geared to avoiding or effectively blocking these modes (as we shall examine at the end of this unit and in detail when we consider risk reduction).

**Transmission Factors for Infection from Exposure to HIV**

As every exposure to the virus does not result in infection, it is important to understand those factors that seem to increase the likelihood of infection by HIV. Among these risk factors are:

...The type of fluid transmitted--blood and semen being those of highest associated risk;

...The route of absorption--injection, rectal, vaginal, and placental being those of highest risk;

...The fluid dose--either a large amount or frequent small amounts being of highest risk; and

...Less directly, the health status of the person exposed--with another illness, particularly sexually transmitted disease, of highest compromise.

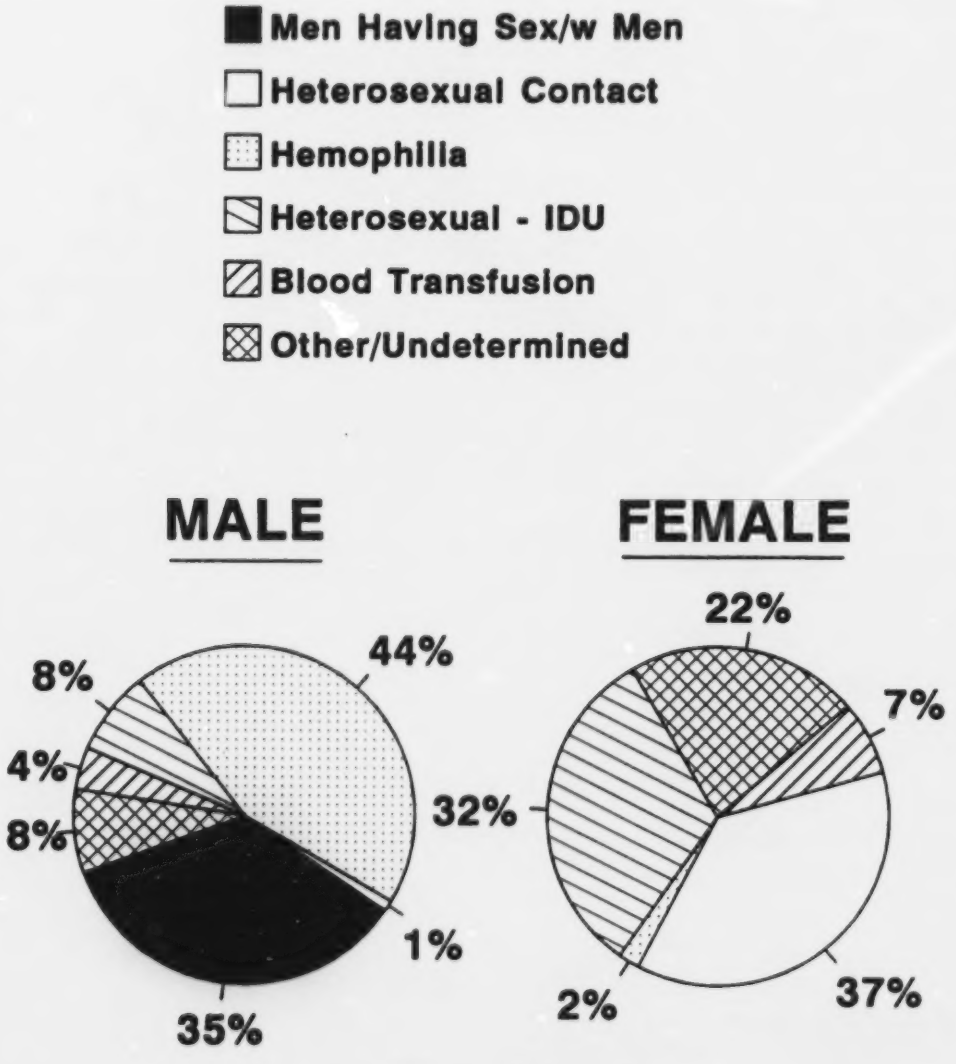


BEST COPY AVAILABLE

Figure 2

# CASES OF AIDS BY EXPOSURE

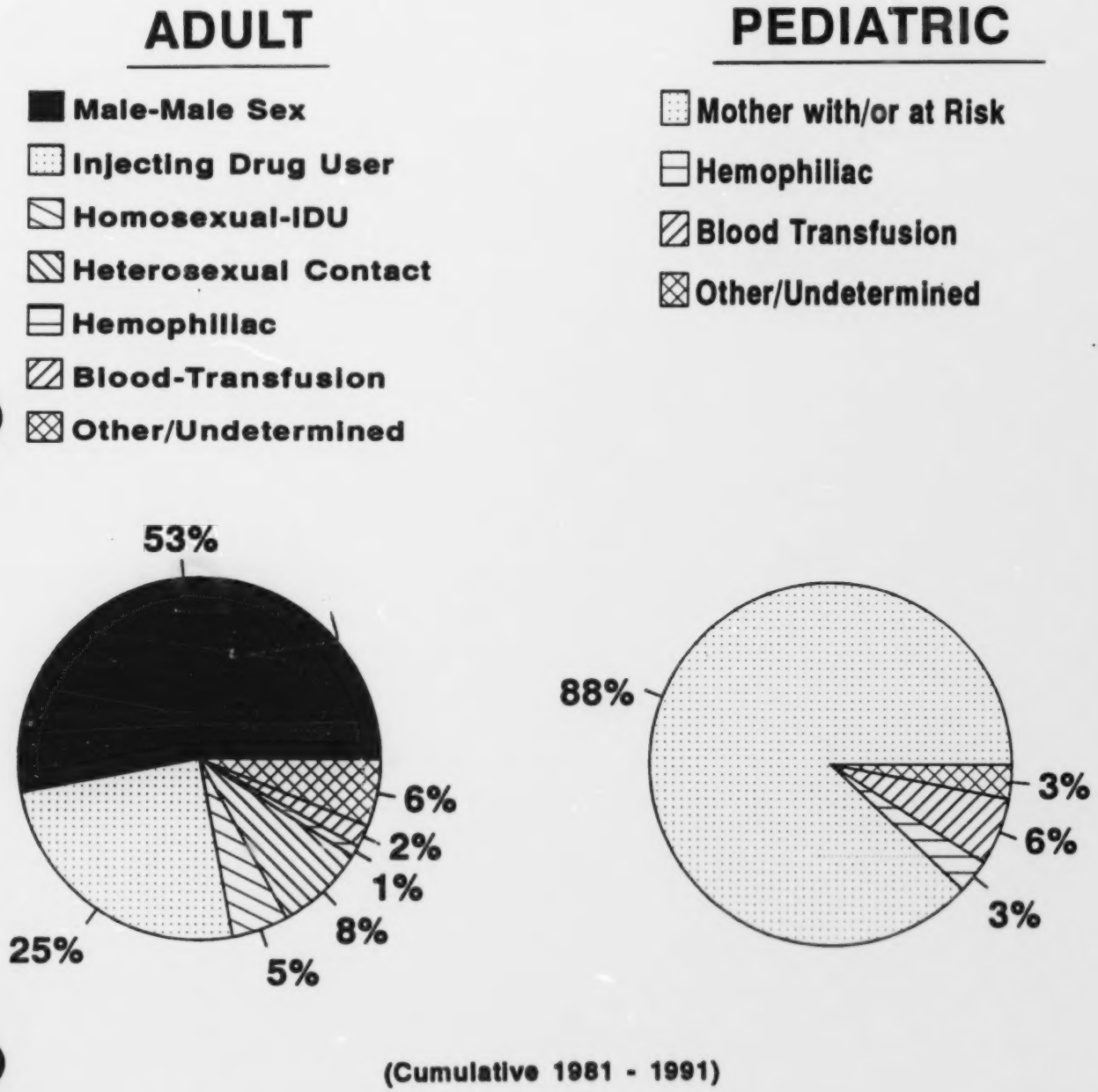
## Adolescent (13-19 year olds) AIDS Transmission
## December 1991




(Cumulative 1981 - 1991)

Figure 2 (continued)

# *CASES OF AIDS BY EXPOSURE*
## *December 1991*




(Cumulative 1981 - 1991)

**Nonrisks for Infection**

Since HIV is bloodborne and sexually transmitted, it is not passed along through insect bites, food, airborne exposure, or such other normal social contacts as handshaking, kissing, using common toilets, swimming in pools, riding public transportation, attending school, working together, drinking from public fountains, or even visiting in hospitals.

Moreover, HIV is easily killed by such modest disinfectant procedures as handwashing, heat, and routine cleansing with such agents as rubbing alcohol, household bleaches, and hydrogen peroxide.

**Family Members Having Direct Contact with Persons with AIDS**

No cases of HIV infection or AIDS have been reported in the United States from close but nonsexual or needle/blood-sharing contacts by family members with Persons with AIDS (PWAs). Ongoing studies of upwards of 100 family members who have lived with people with AIDS and milder manifestations of HIV Disease for an average of 22 months--sharing household items and assisting with bathing, dressing, and eating in living conditions of poverty and overcrowding--found no signs of HIV infection. They have shared the same eating utensils, and nine percent even shared razors in the approximately 18-month period before they knew their family member had AIDS.

## HIV DISEASE

Persons who become infected with HIV can manifest a broad spectrum of clinical responses, of which AIDS is the end and most severe form. Four "stages" of HIV Disease are typically described: Acute onset of infection, asymptomatic incubation, chronic symptoms (heretofore known as "AIDS-related complex" (ARC), and AIDS. These stages may be thought of as points along a continuum of response to infection, although a particular individual will not necessarily experience all stages nor progress inevitably to the last. Progression from one stage to another has been shown to be a function of time and is probably influenced by one or more of a host of potential cofactors.

**Cofactors Associated with Progression of HIV Disease**

The potential role of "cofactors" in the progression from infection to clinical manifestation of disease is poorly understood but may be controllable. As noted above, HIV apparently multiplies more rapidly when the immune system is activated or otherwise compromised (suppressed) by other concurrent infections or challenges.

Research on persons with AIDS has suggested but not proven that a number of cofactors may act to potentiate the damage of HIV, including:

...Reinfection with HIV;

...Intercurrent infections, especially of other sexually transmitted diseases (STDs), such a herpes, hepatitis-B, cytomegalovirus, syphilis, or tuberculosis;

...Most drugs, including alcohol, nicotine, and steroids, as well as illicit substances;

...Anxiety and other environmental stressors that are excessive or poorly managed;

...Pregnancy and labor;

...Poor nutrition or sanitation; and

...Age, which has also been associated as a factor to progression for adolescents.

**The Spectrum of HIV Disease**

**Stage ONE: Acute Onset of Infection**

It typically takes from at least two to eight weeks after HIV enters the body for the virus to establish infection by invading cells and reproducing. With established infection, most persons note no remarkable symptoms or signs of illness. (In some instances, this may be because HIV has established itself only within macrophages, where it is hidden from the body's detection and reaction. When they do manifest, the symptoms of acute onset of HIV infection are similar to those of other viral infections, such that this first stage of HIV Disease was unrecognized for five years.



BEST COPY AVAILABLE

As documented among several health care workers observed closely after they suffered needle-stick injuries, as well as among about a third of a prospective study of gay men, the acute onset resembles mononucleosis or flu: fever, fatigue, red rash, swollen glands, headache, sore throat, and muscle pains. Some studies have found an acute infection of the central nervous system--aseptic meningitis--at this stage. These symptoms appear a few weeks to several months after infection and are transient and self-limiting, resolving in 3-14 days. They are, in turn, accompanied or followed by antibody production.

Stage TWO: Asymptomatic Incubation

Following established infection and resolution of acute onset symptoms (when experienced), nearly all HIV-infected persons remain symptomless for a period of time. That period has been shown to vary widely, from a few months to as long as ten years, and perhaps for life. The history of AIDS is still too short for us to know. During this asymptomatic incubation stage, the virus is apparently not truly dormant in most individuals, who usually show laboratory evidence of immunologic defects that develop rapidly after antibodies are detectable. The long-term health consequences of these changes are not yet clear.

The length of the asymptomatic incubation stage is believed to vary with the individual's age, sex, mode of infection transmission, and general health. Unfortunately, since the history of the epidemic is still so short, and the point of HIV infection so difficult to determine, studies of this stage have primarily been projections based on small cohorts. Such studies of transfusion recipients and (84) gay men at risk for other sexually transmitted diseases have projected that the stage lasts an average of 8.2 years and 7.8 years, respectively. (From these projections, one might speculate that the outside limit would be 15-16 years.) It is thought to be considerably shorter for persons with greater health compromises, such as newborns and IV drug users.

The CDC's initial optimistic outlook that the majority of asymptomatic individuals would remain healthy has been eroded by the passage of time as increasing numbers of individuals studied have progressed to symptoms. Current projections are uniformly dire and vary widely, but generally suggest that HIV Disease is progressive to symptoms within five to ten years for the majority (i.e., 50% or more) of adult cases. Among the most studied "hepatitis B cohort" of gay men in San Francisco, upwards to 80% had progressed to Stage Three or Four after 8.5 years.[1]

These disease progression trends, while certainly alarming, are confounded by the presence of, typically multiple, cofactors in many of the cohorts studied over the longest periods--gay men with other STDs and probably immune-compromising substances use (as documented in 80% of early AIDS diagnoses among gay men), IV drug users, and transfusion recipients. Based on such samples and using primarily mathematical constructs (e.g., T-cell counts, lapsed time, statistical models), our understanding of the course of HIV Disease has taken a deterministic bent--that is, that symptoms proceed inexorably from HIV infection.

A fuller scientific understanding of the asymptomatic incubation stage and progression to symptoms awaits the maturation of controlled studies of larger, more diverse samples of infected individuals. The studies should focus on the biochemical nature of HIV's latency and indirect destructiveness (as from within macrophages), as understanding is needed to inform effective primary and secondary prevention--that is, to help infected individuals:

...Avoid infecting others (primary prevention) at a time when they may be most infectious but least aware of it; and

...Select health promotion plans to reduce the likelihood of disease progression (secondary prevention), whether by reducing other immune system challenges (cofactor) and/or electing treatment that may halve HIV reproduction.

Stage THREE: Chronic Symptoms

The most elusive and ill-defined of all stages of HIV Disease, the third stage has become an "elimination category": It is currently composed of all disease states associated with HIV that are not Stage Two (asymptomatic) or Stage Four (definitive of AIDS). It has also been referred to by various names, including persistent generalized lymphadenopathy (PGL--for its dominant symptom), AIDS-related complex (for its "less-than" likeness to the Stage Four syndrome), and the transition stage (suggesting, once again, inexorable disease progression). It is characterized by the presence of chronic symptoms that do not

---

[1] It should be noted that the much-publicized June 1988 prediction of 99% progression to AIDS from the study of 84 men from this cohort by the CDC and the San Francisco Health Department is seriously flawed and misreported. The reported rate is a projection, not observed actually, drawn from the application of a statistical model, itself constructed from trends among a small cohort of individuals of different characteristics (transfusion recipients). In their report, the authors admit that the projection is little more than a mathematical exercise that will not necessarily predict the experience of undiagnosed individuals in the cohort, let alone other HIV-infected individuals.



BEST COPY AVAILABLE

resolve, are troublesome, and may evolve into fatal forms (which would then permit an end-stage, or AIDS, diagnosis). Over the course of the epidemic, Stage Three, therefore, has been a very fluid category--capturing unusual disease states when they are first identified and associated with immune deficiency and relinquishing those that come in time to be recognized as fatal and reclassified as end-stage.

The symptoms of the chronic state (like those of acute onset of infection) are not notably different from those of other common illnesses. The distinguishing features clinically are the persistence and unusual expression of the symptoms. Thus, for example, the most characteristic symptom--lymphadenopathy, or severely swollen lymph glands--persists for over two months and presents, generally, in the neck, armpits, and beside the groin. Other symptoms include oral thrush (a yeast infection causing white patches in the mouth, common in children but not adults), hairy leukoplakia (heretofore considered a precancerous condition), and subtle CNS symptoms that frequently elude detection (such as unusual nerve sensations in the extremities).

If such symptoms are detected, a variety of laboratory tests are typically used to confirm an association with HIV Disease. These include suppressed lymphocyte counts, inverted T helper to suppressor cell ratios, elevated immunoglobulin levels, nonreactive skin tests to recall antigens for such other viruses as mumps or tuberculosis, and other evidence of immune abnormalities, in addition to positive results from one or more HIV antibody tests. If such evidence is found in the absence of life-threatening disease, the individual is considered symptomatic of HIV Disease (but not to have AIDS).

The prognosis for persons in Stage Three is even more unclear than for Stage Two. Many symptomatic individuals remain stable for years, often with symptoms abating and recurring in similar severity. But it is believed that most will, without effective treatment, progress to AIDS within a five-year period. Both the surveillance and prognosis of symptomatic HIV Disease are confounded by the newness of the disease, which occasions constant oversight as well as detection of new illnesses and frequent reassignment of those illnesses discovered to be life-threatening. For example, two sets of disease categories--the so-called "wasting syndrome" and "HIV dementia"--were initially relegated to Stage Three. With the recognition that they can be fatal, they were reclassified as AIDS categories in August 1987, and in the ensuing year, 9,000 additional AIDS cases were diagnosed that would not have been identified as such earlier. Similarly, the yeast infection that causes oral thrush is considered nonlife threatening in the mouth, but definitive of AIDS when it disseminates to the esophagus and elsewhere in the body. As a result, a better understanding of Stage Three--clinical expression, limits, and prognosis--awaits further medical and scientific refinement.

**Stage FOUR: AIDS**

As established in late 1982 by the CDC, initial criteria for an AIDS diagnosis required that two conditions be met:

1. The presence of a reliable diagnosed--objectively confirmable (by culture or biopsy)--disease that is at least moderately indicative of underlying cellular immunodeficiency; and
2. The absence of other explanations for this condition.

The original list of indicative diseases included 11 unusual, so-called "opportunistic," infections and cancers. The most notable of these were and remain Pneumoncystis carinii pneumonia and Kaposi's Sarcoma (see below).

Since that time, several unusual forms of otherwise common diseases and malignancies (such as disseminated TB) not on the CDC hallmark list have been included in the definition, as they have been discovered to be life-threatening and found in combination with evidence of HIV infection. Increasing recognition and diagnosis of this range of illnesses associated with end-stage HIV Disease has been facilitated by the increasing availability and sophistication of tests for HIV infection and underlying immune deficiency.

Most recently, as noted above, two whole disease subcategories were added to the CDC surveillance definition of AIDS, and more presumptive diagnoses are now permitted when supported with evidence of HIV infection. As a result, in summer 1988, the categories of illness that characterized Stage Four of HIV Disease may be arrayed as:

...Wasting syndrome;

...AIDS dementia;

...Secondary (opportunistic) infections;

...Rare cancers; and

...Interstitial pneumonia (in children).

The causes, unknown and suspected, and symptoms of these illnesses are described below.



BEST COPY AVAILABLE

**Wasting Syndrome.** The constitutional disorders that comprise this syndrome have been commonly associated with HIV Disease since the early days of the epidemic in the United States and, particularly, in Africa (where it was dubbed, as a result, "slim's disease"). The symptoms of the wasting syndrome include:

...Rapid unexplained weight loss of ten percent or more of body weight;

...Persistent fever of 100 degrees or more for at least 30 days; and/or

...Chronic unexplained diarrhea.

The syndrome is also typically accompanied by unusual, unexplainable fatigue or listlessness and recurrent drenching night sweats.

The causes of wasting syndrome, though not definitely established, are believed to be connected with the action of HIV itself, particularly as it has recently been shown to attack lower intestinal cells. Once the devastation and frequent fatality of the syndrome were recognized, it was added to the list of diseases defining Stage Four in August 1987.

**AIDS Dementia.** Also added at that belated point was a progressive intellectual, motor, and behavioral deterioration, difficult to diagnose because of its insidious development, or to differentiate later from the effect of opportunistic infections that attack the CNS. Now recognized as the result of HIV's action--whether indirectly via destructive secretions of infected macrophages or direct attack of brain cells--AIDS dementia manifests in such overt and progressive symptoms as:

...Memory loss, forgetfulness, and confusion;

...Changes in gait or coordination, blurring of vision/hearing, slurred speech

...Mood swings and depressive states; and

...Delusions, numbness in limbs, paralysis, and degeneration of the spinal cord in late stages.

Although AIDS dementia often eludes detection until after another AIDS-related disease has been diagnosed, it may be the first symptom in many cases. At least two-thirds of AIDS patients have some signs of this disorder before they die. Many people die of AIDS dementia absent other definitive illnesses.

## Figure 3

### PREVALENCE OF SOME COMMON STAGE FOUR AIDS-ASSOCIATED ILLNESSES (Adults/Adolescents)

| Illness | Prevalence* |
|---|---|
| Pneumocystis carinii pneumonia (PCP) | 49% |
| HIV Wasting Syndrome | 17% |
| Candidiasis | 15% |
| Kaposi's sarcoma | 11% |
| Cytomegalovirus | 7% |
| HIV Encephalopathy (dementia) | 6% |
| Cryptococcoses | 6% |
| Toxoplasmosis | 5% |
| Mycobacterium avium | 4% |
| Herpes Simplex | 3% |
| Tuberculosis | 2% |

*Prevalence: The disease(s) found upon initial diagnosis of AIDS in patients since the CDC case redefinition in September 1987. More than one disease may be listed



BEST COPY AVAILABLE

## Figure 3 (continued)

for each case, and the initial illness does not reflect later illnesses that may ultimately cause death.

Descriptions of the above illnesses may be found in the Appendix.

Source: HIV/AIDS Surveillance Year-End Edition, issued January 1991.

**Secondary (Opportunistic) Infections.** The opportunistic infections that persons with AIDS suffer from are not common or usually significant in persons with healthy immune systems. Many are caused by infectious agents that are found throughout our environment. These illnesses in AIDS cases tend to have an aggressive clinical course, be very resistant to treatment, and have a high rate of recurrence after specific treatment stops, because patients have no more "resistance."

The most frequently encountered AIDS-associated illnesses are:

- Pneumocystic carinii pneumonia (PCP), recently recognized as caused by a fungus, is characterized by dry cough, fever, shortness of breath, and intense pain when inhaling. A bout of PCP often lasts for a month and is sometimes preceded by wasting debilitation. One of the first hallmarks of AIDS, PCP is the first disease diagnosed among the majority of people with AIDS (PWAs), and three-fourths of PWAs have at least one bout. Although 90% survive this episode, at least a fifth have a relapse. PCP is susceptible to treatment and prophylaxis with pentamidine and other drugs.

- Candidiasis (or thrush) of the esophagus, bronchi, trachease, and/or lungs is the third most frequent disease listed as a primary condition.

- Cryptococcosis is a fungus infection that may cause meningitis or CNS involvement, or may produce pneumonia or pleurisy with headache and fever.

- Cytomegalovirus (CMV), a virus from the herpes family, causes a fulminant mononucleosis-like syndrome with infection of internal organs other than the liver, spleen, or lymph nodes. It also may manifest as pneumonia or colitis. One of the most serious manifestations is spots in the retina, which typically lead to blindness.

- Cryptosporidiosis is a (protozoan) parasitic infection that produces unrelenting diarrhea with enormous fluid losses. It may be accompanied by nausea, vomiting, and loss of appetite, leading to weight loss.

- Chronic herpes simplex in AIDS patients causes chronic mucocutaneous ulcers, especially in and around the anus, or disseminated infection. It may progress to encephalitis or pneumonia.

- Toxoplasmosis is caused by (protozoan) parasites found in undercooked meats, cat feces, and contaminated water. In AIDS patients, the infection affects the brain and manifests as seizures and other neurologic deficits.

- Disseminated tuberculosis is outside (the more common area of) the lungs--in bones, lymph glands, nerves, rectum, or lining around the ears. TB was added to the list of AIDS-indicative disease in 1986. TB does respond to therapy, but is of special concern because it is more contagious than other AIDS-associated infections.

**Rare Cancers.** Like secondary infections, the cancers that constitute an AIDS diagnosis are not found in persons with healthy immune systems.

-- Kaposi's sarcoma (KS) is a rare cancer of the skin's blood vessels that first appears as small, blue-violet to brownish lesions on the trunk, arms, head, and neck and later develops into ulcerating sores or invades the lungs and other organs. Along with PCP, KS was an early hallmark of AIDS, but its diagnostic incidence is decreasing, especially compared to primary HIV Diseases (wasting syndrome and AIDS dementia). KS, by itself, is debilitating but rarely the principal cause of death in AIDS cases.



BEST COPY AVAILABLE

-- Other malignancies such as non-Hodgkin's lymphomas, when accompanied by the positive serologic test for HIV antibodies, have also been accepted by CDC since 1985 as indicated of AIDS. The prognosis for this group is poor, and the lymphomas are frequently found in unusual sites--the rectum, gastrointestinal system, or central nervous system.

**Interstitial Pneumonia.** Another atypical pneumonia constitutes the (current) last category of AIDS illness, set aside because it probably results from the activity of HIV itself, rather than a secondary agent. This pneumonia is found primarily in children and is highly resistant to treatment.

Some of the AIDS-associated diseases occur more frequently in different populations than others. For example, IV drug users--when diagnosed--are more likely to have PCP, tuberculosis, and mycobacterium avium-intracellular (MAI). Most cases of KS have been concentrated among gay men and are now noted increasingly among female sexual partners who are diagnosed with AIDS. Immigrants from the Third World tend to present with illness similar to American IV drug users as well as with toxoplasmosis and cryptococcal meningitis. The reasons for this variation in disease presentation are unknown, although it has been speculated to be a function of HIV transmission mode, cofactors, and/or health care history/access.

While AIDS-related symptoms and diseases have been recognized and classified in adults and children, no age-specific classification system for adolescents with HIV/AIDS exists. A combination of the CDC adult and pediatric classification systems is used for adolescents.

The natural course of HIV Disease in adolescents remains largely unstudied. Preliminary data suggests that adolescents are symptomatic longer than adults. Circumstantial data reveals two trends about the development of HIV Disease within adolescents:

1. The disease in adolescents who are hemophiliacs appears to progress at a slower rate than in either infants or adults.

2. Anecdotal reports point to a rapid progression of HIV Disease in street youths.

Symptoms particular to adolescents are weight loss or failure to gain during standard growth spurts.

HIV infection, as in adult and pediatric cases, manifests a broad range of illnesses and therefore takes a varied clinical course in adolescents. It is unknown which clinical manifestations predominate in adolescents.

**Living with AIDS and Prognosis.** The lives of persons with AIDS, between bouts of hospitalization for treatment of more and more frequently occurring and multiple infections, can be excruciating. Daily activities become very difficult and frequently impossible, as extreme fatigue, psychomotor, and vision impairment worsen. The physical appearance of "wasting away" and/or ulcerating sores is distressing, the embarrassment of incontinence or severe diarrhea, devastating. And, of course, amidst the physical ravages, there can be incalculable financial, family, and personal ruin resulting from the incredible social stigma that still attaches to an AIDS diagnosis. The needs of PWAs--beyond medical care--are enormous.

Survival time post-AIDS diagnosis has substantially increased since the first years of the epidemic, thanks in large part to better treatment techniques for opportunistic infections and to the release of the anti-viral drug AZT (see below). Still, the year-one mortality rate is 48% and it increases to 70% two years after diagnosis. Approximately 85% of all AIDS patients succumb within five years. Those who present with certain diseases like PCP seem to die faster. IV drug users usually die more rapidly than other risk group members, and one recent study found black female IV drug users to have the worst survival rate.

Those few (15%) PWAs who have enjoyed longer-term survival--five years or more post diagnosis--are a poorly studied group, which yields a very distorted picture of the prognosis for AIDS. What we do know about such survivors to date is that they tend to be white gay men, typically with only a KS diagnosis. One study further profiled survivors as hopeful fighters who refuse to accept AIDS as a death sentence, make lifestyle adjustments, attend to their health and fitness, and actively engage in a healing partnership with their health care providers, often including holistic treatments. Further study of long-term survivors should go a long way in helping to formulate effective tertiary prevention efforts (those aimed at mitigating the long-term consequences of advanced disease), including treatment.

## TREATMENTS

Ten years after discovery of our first cases of AIDS, we still have no cure for HIV Disease, and the considerable activity devoted to vaccine and treatment development has yielded little.

**A Vaccine** - While vaccines have been a powerful line of primary prevention in the last 30 years, HIV presents numerous challenges. It mutates rapidly, and neutralizing antibodies are not apparently developed by the body for all strains of the virus. Moreover, the antibodies stimulated by a vaccine may be no more effective at protecting against HIV infection than those produced naturally. Finally, given HIV's ability



BEST COPY AVAILABLE

to quickly invade, hide, and reproduce within macrophages, it may still elude even a pre-alerted antibody response.

Although a dozen development projects are underway, a marketable vaccine for general distribution is not anticipated before 1995, if then. The formidable technical problems are at least equalled by legal liability problems of willing research subjects, because there are currently no adequate animal models for testing the reliability of the vaccine.

**Anti-Infectives** - Promising drugs to combat the secondary infections associated with AIDS have been increasingly identified--typically from sources outside the United States--and are being administered by individual physicians treating small numbers of patients. The National Institutes of Health currently run the AIDS clinical trials programs. Their purpose is to evaluate experimental drugs and therapies for adults and children at all stages of HIV infection.

As a result, pentamidine--a drug treatment for PCP--is now a widely recognized anti-infective treatment in the United States. An intravenous dosage has been approved by the FDA for treatment of active PCP for many years, and, more recently, an aerosolized dosage (for prophylaxis) has been approved. Pentamidine is widely accessible to PWAs, and less to persons who are not diagnosed with AIDS. Several other prophylaxis regimens are being evaluated, including dapsone and trimethoprim/sulfa (trade name is Bactrim or Septra).

Even with increased information on efficacy and improved availability, anti-infectives do not address the underlying HIV Disease. Thus, much treatment development has concentrated on therapies to either incapacitate HIV or restore the damaged immune system or both. Development of these so-called "anti-virals" and "immune-modulatores" has also been handicapped by the established drug approval process.

**Anti-Virals** - A number of anti-viral drugs are now in different stages of laboratory testing and clinical trials. These all attempt to intervene in some stage of the viral life cycle--both HIV and secondary viruses such as CMV--and prevent further growth or reproduction. Theoretically, an effective drug could interfere with HIV's ability to invade and kill the T-4 cells by: (1) Altering the receptor on the cell or the protein coat of the virus to block binding; (2) Preventing entry of the virus into the host cell and uncoating of the protein envelope; (3) Interfering with the conversion of viral RNA into DNA; (4) Halting integration of the virus into the genetic code of the cell; (5) Blocking the virus' powerful chemical switch--that triggers the incredibly rapid reproduction of HIV; or (6) Preventing formation of new viral particles and their release from the infected cell.

One major problem is that the human body has difficulty tolerating drugs that are powerful enough to attack HIV. These drugs also need to be able to find HIV in macrophages and to pass the blood-brain barrier, where HIV can be harbored. They must also be safe and sufficiently nontoxic for prolonged use--possibly for a lifetime--and relatively simple to administer, preferably orally.

The only FDA-approved anti-viral to date is zidovudine or AZT (trade name, Retrovir), which disrupts the reverse transcriptase enzyme that HIV uses to convert its RNA genetic material into DNA and inhibits the synthesis of proviral DNA. By poisoning this enzyme, reproduction of HIV is slowed. Patients given this drug in early trials survived longer than counterparts who were given placebos. They also had fewer relapses of the opportunistic infections associated with AIDS. Unfortunately, AZT can itself be toxic and is expensive (maintenance supply calculated at $3,000 per year). Some people with AIDS cannot tolerate its side effects, and other HIV-infected people cannot afford it or qualify for the public subsidies for its purchase that are available to PWAs.

Many of the other anti-virals, all slowly making their way through the FDA approval process, are showing promising anti-viral properties and tolerable or nontoxic side effects. With years ahead before they are likely to approved, the FDA recently sanctioned individual import--at nonreimbursable personal expense--of such drugs.

**Immune-Modulators** - Early attempts at restoring the immune system and replenishing depleted T-4 cells through bone marrow transplants or white cell injections met with no measurable success. An increasing number of drug therapies aimed at stimulating and reactivating the immune system are in clinical trials. Initial study results on several of these show considerable promise of efficacy, especially in combination with anti-viral treatments.

## EPIDEMIOLOGY OF HIV DISEASE: DEFINING THE PREVENTION TARGETS

In order to appropriately target primary prevention efforts (those that aim to prevent transmission of HIV), it is necessary to understand who is being infected, what behaviors they are engaging in, and any other key demographic characteristics of the "pool of infection" as it exists and changes over time.

BEST COPY AVAILABLE

## Distribution of AIDS Cases by HIV Transmission Categories:

The distribution of AIDS cases among adults and adolescents is as follows:

| HIV Transmission Risk Behavior | Cases in 1991 | % of Adolescent Cases in Dec. 31, 1991 | |
|---|---|---|---|
| | | Male | Female |
| Male-Male Sex | 53% | 35% | -- |
| IV Drug "Works"-Sharing | 25% | -- | -- |
| Male-Male Sex & IV Drug Works-Sharing | 5% | -- | -- |
| Heterosexual & IDU | -- | 8% | 32% |
| Heterosexual | 8% | 1% | 37% |
| Hemophiliac | 1% | 44% | 2% |
| Recipients of Blood | 2% | 4% | 7% |
| Undetermined | 6% | 8% | 22% |

A comparison of HIV transmission categories of adult and adolescent AIDS cases reveals the following:

- While male-male sex has always continued to be larger transmission category for adult AIDS cases, it ranks second for adolescents with AIDS.
- Similarly, although intravenous drug use is the second largest transmission category for adult persons with AIDS (PWAs), it ranks fourth for adolescents with AIDS>
- Heterosexual transmission is 5% of adult AIDS cases, yet 36% of adolescent cases of AIDS.

Additional information on adolescents and HIV follows:

- Male-male sex is practiced by heterosexually identifying adolescents. Incarcerated or detained youths engage in unprotected male-male sex.
- In addition to injection drug use, crack cocaine is contributing to the increase in heterosexual transmission of HIV. Drug experts state that crack cocaine causes hyper-sexuality in users. This factor combined with the exchange of sex for crack or sex for purchasing crack is contributing to the unabated spread of HIV.
- The practice of serial monogramy among adolescents is considered to be high-risk behavior. In this situation, the adolescent male or female moves in and out of a series of monogamous relationships. Sexual involvement with multiple sex partners increases that person's chance on contracting HIV.

## Distribution of AIDS Cases by Age, Gender, and Race

As noted earlier, limited studies have been done on adolescents with AIDS. Hence, our information on this group is confined to the CDC Monthly HIV/AIDS Surveillance Report. Excerpts from this report are summarized below.

- Age - Nearly 90% of the Nation's AIDS cases have been between 20 and 49 years old - 46% of them in their thirties. This is fairly consistent across time and racial groups, although minority group members with AIDS have tended to be slightly younger. Note that given these trends in AIDS cases, the estimated incubation would be between ages 12 and 41, with the largest group in their twenties.
- Gender - Women contract AIDS much less frequently than men, accounting for less than eight



BEST COPY AVAILABLE

shared drug works. Thus, almost three-fourths (70%) of female AIDS cases are attributable, directly or indirectly, to drug abuse. All these percentages are on the increase. (At the end of 1986, female cases were only seven percent of the total; of the female cases, works-sharing comprised 51%; heterosexual cases, 22%; and combined drug-linked cases, 67%).

- **Race** - Similar to the disproportionate representation of Blacks and Latinos among the total number of adult AIDS cases, 56% of adolescent AIDS cases are minorities (Black = 35%, Hispanic = 19%).

AIDS measurement among other racial/ethnic groups in the United States. (e.g., Asian, Pacific Island, and Native Americans) suffers from reporting problems that have historically plagued epidemiological studies of small minority groups in the United States. Thus far, these groups appear to be reporting AIDS cases at rates below their representation within the general population. Asian/Pacific Islanders, for example, account for 1.6 percent of the population but .6 percent of AIDS cases. Similarly, Native Americans are one percent of the population and one percent of AIDS cases.

**For specific and updated statistics call the South Dakota Department of Health at 1-800-592-1861 or the South Dakota Department of Education at (605) 773-3261.**

# Sample AIDS Curriculum — Scope and Sequence

| | AIDS Is A Disease | AIDS Is A Preventable Disease | AIDS Affects Us All | AIDS Help Is Available |
|---|---|---|---|---|
| | Concept: There are some diseases that are communicable diseases. AIDS is a communicable disease. | Concept: There are skills to practice that will lead to a healthful lifestyle. There are also specific methods of prevention for AIDS. | Concept: There are social and economic implications of AIDS. | Concept: There are community and area resources for information, help and counseling. |
| | Goal I: Recognize the causes and characteristics of communicable and non-communicable diseases. | Goal II: Identify the methods of preventing, treating, and controlling diseases. | Goal III: Evaluate the effects of disease on individuals, families, communities, and societies. | Goal IV: Recognize the roles and responsibilities of local, state, and national health professionals, organizations, and agencies. |
| | The student will: | The student will: | The student will: | The student will: |
| K | 1. Describe the difference between being sick and being well.<br>2. Understand that some diseases are "caught" and some are not "caught". | 1. Identify and practice healthy behaviors that reduce the chances of becoming sick. | 1. Recognize that people need friends both when they are well and when they are sick. | 1. Identify health helpers. |
| 1 | 1. Identify common communicable and noncommunicable diseases.<br>2. Describe how common communicable diseases are usually spread. | 1. Identify and practice healthy behaviors that reduce the spread of communicable diseases. | 1. Describe how family members show care and help one another during times of illness. | 1. Explain why immunizations are given before entering school. |
| 2 | 1. Understand that communicable diseases are spread from one person to another as a chain effect. | 1. Explain how good health habits prevent disease.<br>2. Understand personal responsibility in the prevention and control of disease. | 1. Recognize death as a natural step in the life of animals and humans.<br>2. Recognize the need to express emotions about death/loss to friends and family. | 1. List local health professionals. |
| 3 | 1. Understand that some diseases are caused by microorganisms including viruses and bacteria.<br>2. Understand that the immune system helps protect the body from disease. | 1. Identify diseases caused by microorganisms that have been controlled.<br>2. Identify personal actions necessary for continued control of these diseases. | 1. Understand the effect of an epidemic on a community. | 1. Understand that scientists all over the world are trying to find a cure for diseases caused by microorganisms. |
| 4 | 1. Identify AIDS (Acquired Immune Deficiency Syndrome) as a disease that is difficult to get.<br>2. Identify AIDS as a disease caused by a virus.<br>3. Explain how the AIDS virus attacks the body's immune system. | 1. Understand personal responsibility in seeking accurate health information.<br>2. Discuss common misunderstandings about the transmission of the AIDS virus. | 1. Discuss how lack of accurate information leads to anxiety, uncertainty, and fear. | 1. Identify local resources which provide accurate information about AIDS. |
| 5 | 1. Explain the structure and function of the reproductive system. | 1. Discuss the importance of making responsible decisions that promote good health. | 1. Explain the importance of taking responsibility for oneself and others.<br>2. Explain the importance of self-respect. | 1. Discuss state resources which provide accurate information about AIDS. |
| 6 | 1. Understand the modes of transmission of HIV (Human Immunodeficiency Virus) and other STDs (Sexually Transmitted Diseases). | 1. Review and practice decision-making skills. | 1. Discuss the abuse of alcohol and drugs as it affects behavior. | 1. Understand the role of the Centers for Disease Control in health promotion and disease control. |
| 7 | 1. Understand the origin of the AIDS virus.<br>2. Review in detail the immune system and the effects of HIV on it. | 1. Explain the routes of transmission of HIV.<br>2. Discuss those behaviors which put individuals at high risk for getting AIDS. | 1. Examine the consequences that acquiring AIDS has on an individual, family, and community. | 1. Review local resources available for AIDS information. |
| 8 | 1. Compare communicable and non-communicable diseases.<br>2. Analyze the chain of infection as it relates to common communicable diseases including AIDS. | 1. Analyze risk behaviors and relate these to the chain of infection.<br>2. Predict ways the AIDS chain of infection can be broken. | 1. Analyze public reaction to persons with AIDS and identify reasonable and unreasonable reactions.<br>2. Examine the consequences of choosing unhealthy behaviors on the individual, family, and community. | 1. Discuss the responsibility of the media in giving accurate information about AIDS. |
| 9 thru 12 | 1. Identify and list the causes, routes of transmission, and symptoms of AIDS and other STDs.<br>2. Describe the levels of HIV infection.<br>3. Explain how a healthy immune system functions and what happens when the immune system is invaded by HIV.<br>4. Apply information concerning AIDS to the communicable disease chain. | 1. Understand importance of abstaining from sexual activity until a mutually monogamous relationship is established within the context of marriage.<br>2. Understand the importance of abstaining from illegal drug use.<br>3. Identify behaviors that reduce the risk of acquiring HIV infection.<br>4. Review and practice decision-making skills. | 1. Distinguish facts, myths, opinions, and unknowns relating to AIDS.<br>2. Examine ethical issues related to AIDS:<br>a. right to know vs. confidentiality<br>b. testing<br>c. discrimination<br>d. banking blood<br>3. Examine the physical, emotional, and family needs of people with AIDS and the financial costs of caring for them.<br>4. Demonstrate ways in which they can show caring for a person with AIDS. | 1. Compare health and health-related organizations which provide AIDS information for individuals and groups:<br>a. Counseling services<br>b. Self-help groups<br>c. Social service support<br>d. Testing programs<br>e. Substance abuse treatment programs<br>f. Mental health services<br>g. Religious organizations<br>h. Hot lines<br>i. Hospital/medical treatment<br>2. Consider how each AIDS-related resource fulfills a responsibility, where there are omissions or overlaps, and what still remains to be done.<br>3. Discuss the issues related to the financial impact of AIDS on individuals, families, and societies. |

*Prepared by SD Dept. of Health*
*- Division of Health Services*
*- Division of Public Health*
*SD Dept. of Education and Cultural Affairs*

BEST COPY AVAILABLE

# SAMPLE

# CURRICULUM

# Kindergarten

KINDERGARTEN

GOAL I: Recognize the causes and characteristics of communicable and noncommunicable diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Describe the difference between being sick and being well.<br><br>2. Understand that some diseases are "caught" and some are not "caught". | 1. With the class, the teacher will brainstorm a list of words that complete the phrases, "When I am well, I feel ..." and "When I am sick, I feel ..."<br><br>2. With the teacher, the class will complete the story lines distinguishing contagious from noncontagious illnesses.<br>Examples:<br>a. Ann has chicken pox. Mary wants to see Ann's spots. Should she visit Ann? What might happen if Mary visits Ann?<br>b. Bill's grandpa is living at Bill's house since he had a heart attack. Bill wants Jerry to stay overnight. Can Jerry catch a heart attack from Bill's grandpa?<br>Teacher and students continue to create their own story lines. | |

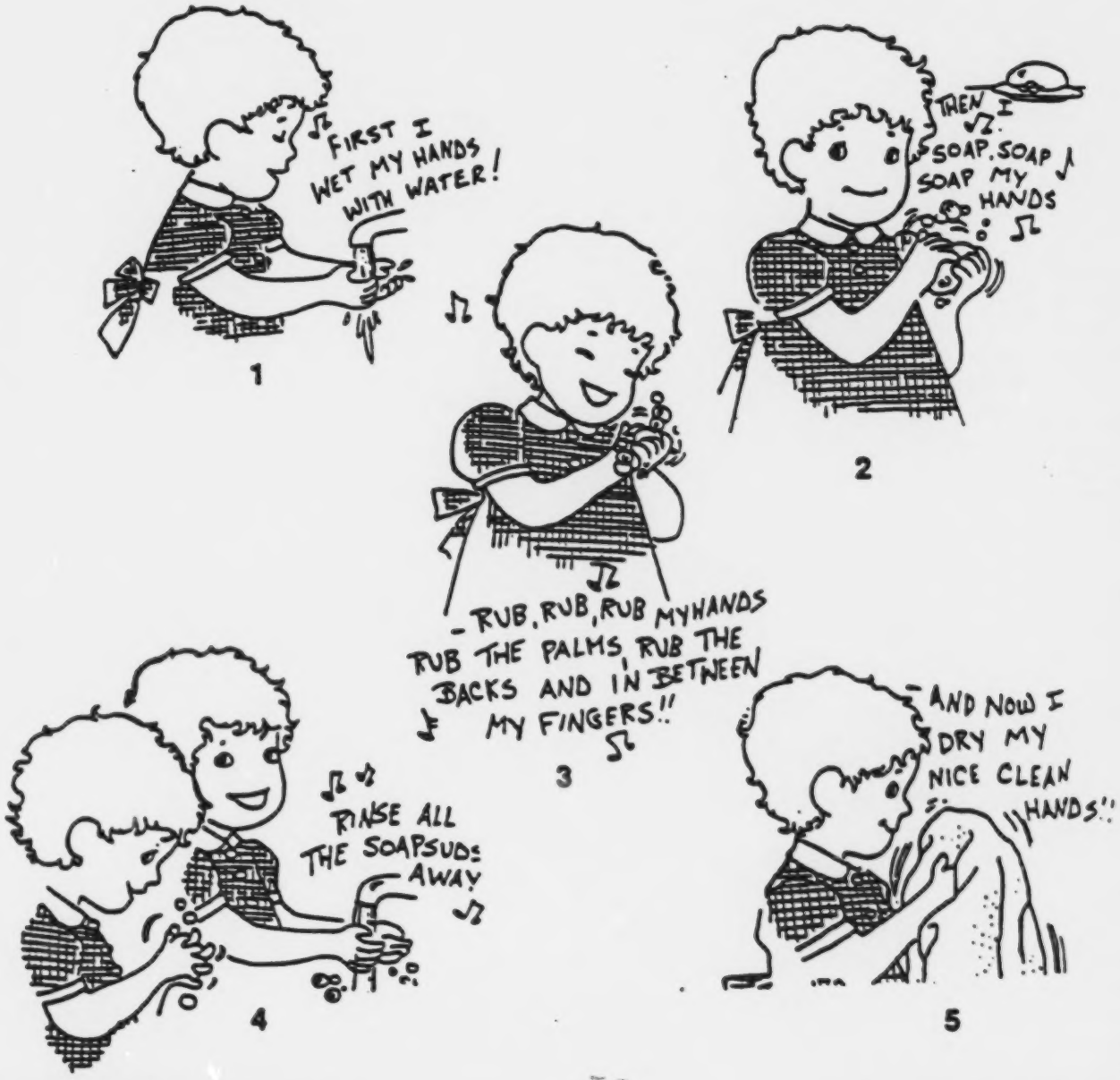
GOAL II: Identify the methods of preventing, treating, and controlling diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Identify and practice healthy behaviors that reduce the chance of becoming sick. | 1. With direction from the teacher, students will role play healthy behaviors which they have identified such as:<br>a. washing hands<br>b. using tissues when sneezing or coughing<br>c. getting adequate rest<br>d. eating balanced meals<br>e. sharing thoughts and feelings (laughing and crying)<br>f. exercising<br><br>2. Teacher will reinforce the practice of healthy habits in school on a regular daily basis.<br><br>3. Teacher will reinforce healthy habits in school by:<br>a. Practicing hand washing. (Worksheet K-A)<br>b. Demonstrating simple exercises. Students will join in.<br>c. After discussion of healthy foods, students will color foods from the four basic food groups. (Worksheets K-B through K-E) | |

# Washing Hands

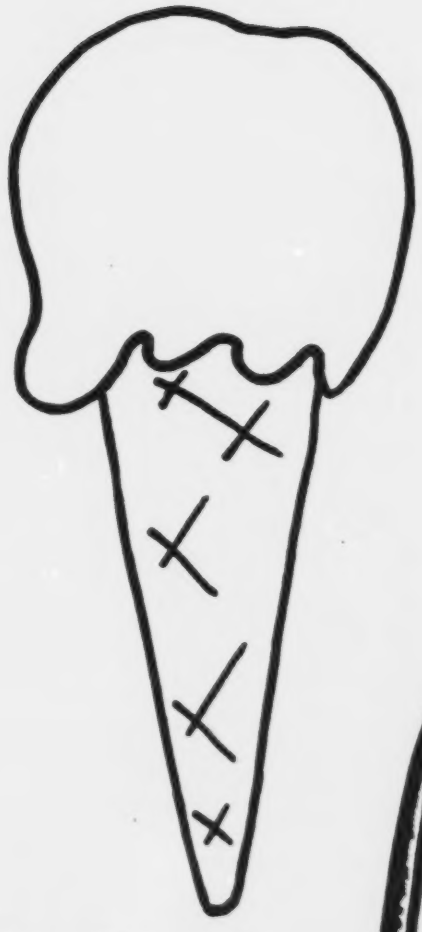
Washing hands is the first line of defense against disease and infection. They should be washed after playing, before eating, after handling pets, after going to the toilet, after holding hands over mouth when sneezing and coughing, and after any kind of scratch or cut has occurred.

Demonstrate and have children practice washing hands, using the following procedures:

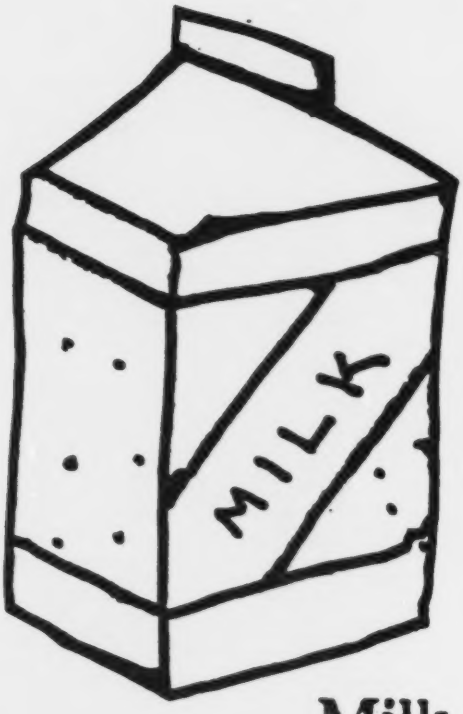

FIRST I WET MY HANDS WITH WATER!
1
THEN I SOAP, SOAP SOAP MY HANDS
2
- RUB, RUB, RUB MY HANDS RUB THE PALMS, RUB THE BACKS AND IN BETWEEN MY FINGERS!!
3
RINSE ALL THE SOAPSUDS AWAY
4
- AND NOW I DRY MY NICE CLEAN HANDS!!
5

Reproduced with permission of the state of Delaware, Dept. of Public Instruction

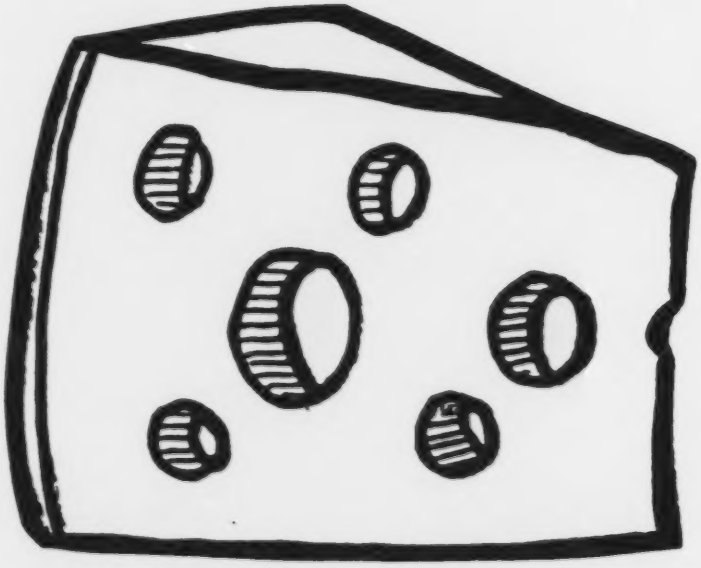
# MILK GROUP



Ice Cream

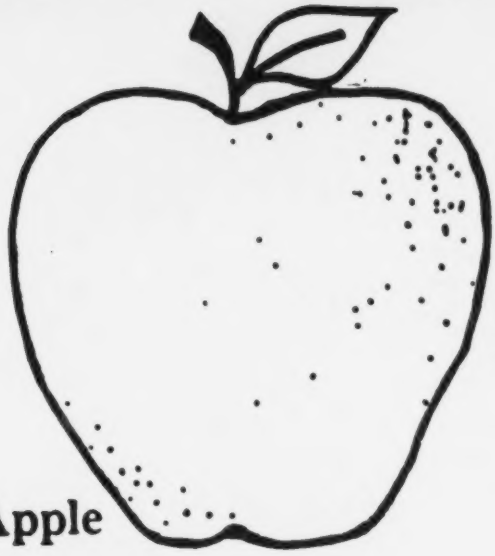



Milk

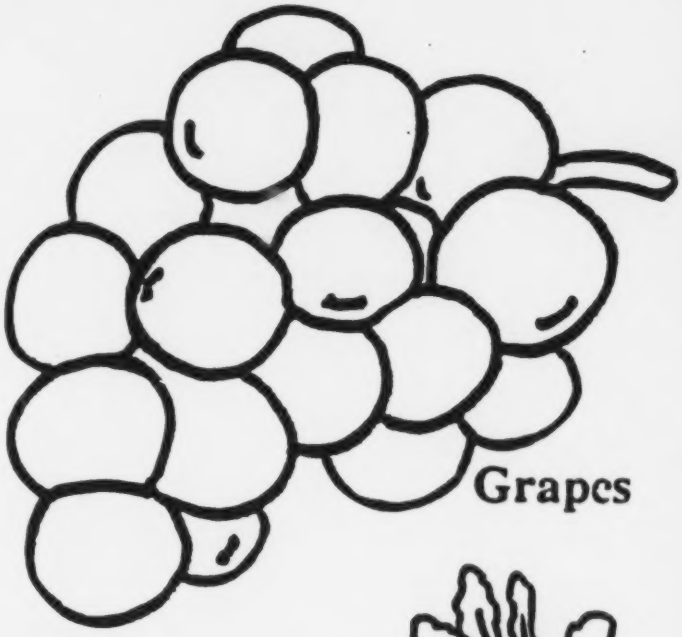


Cheese

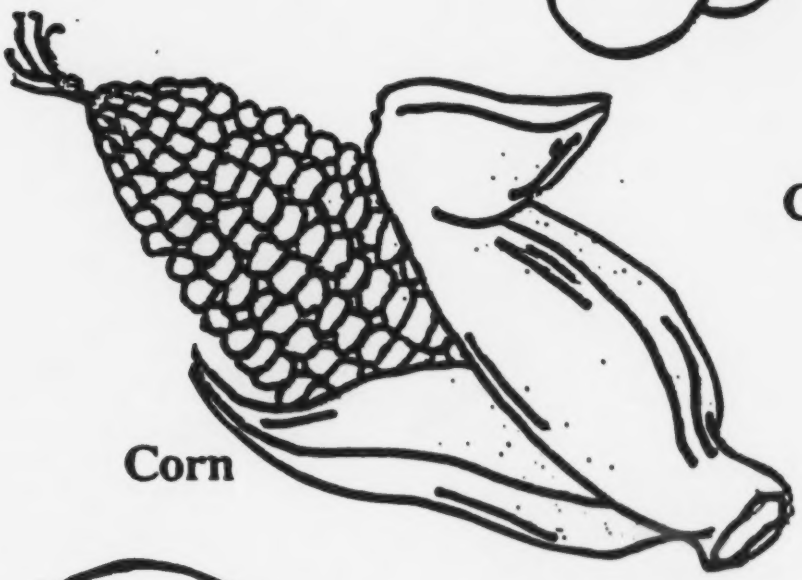
# FRUIT - VEGETABLE GROUP



Apple

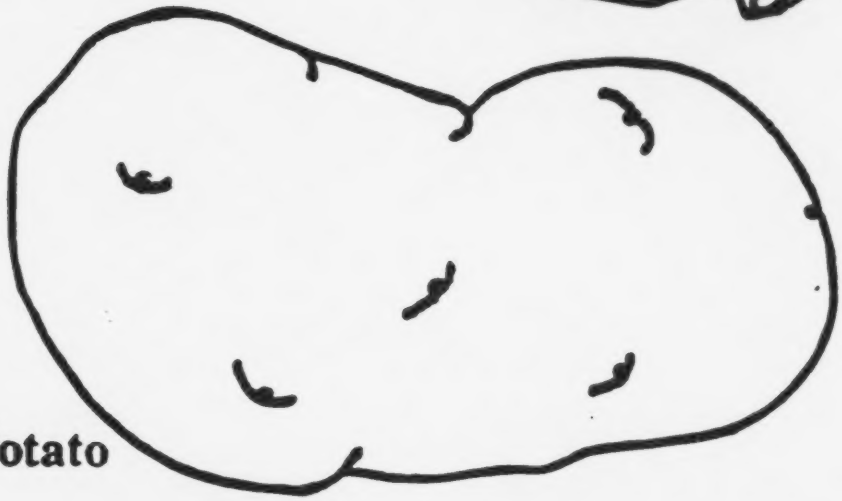


Grapes



Corn

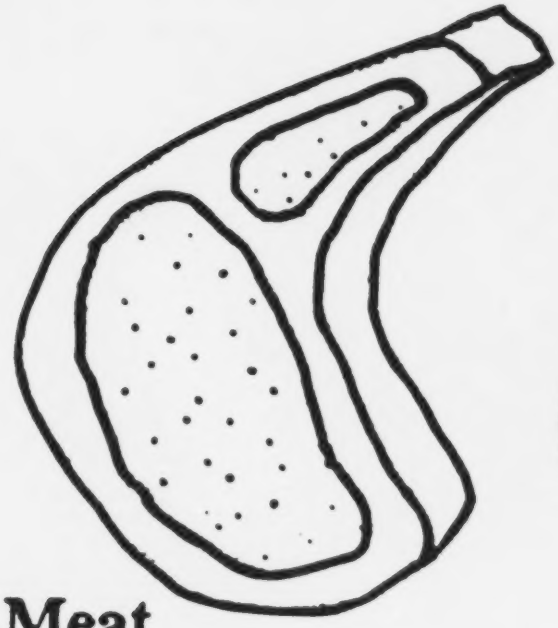
Carrot



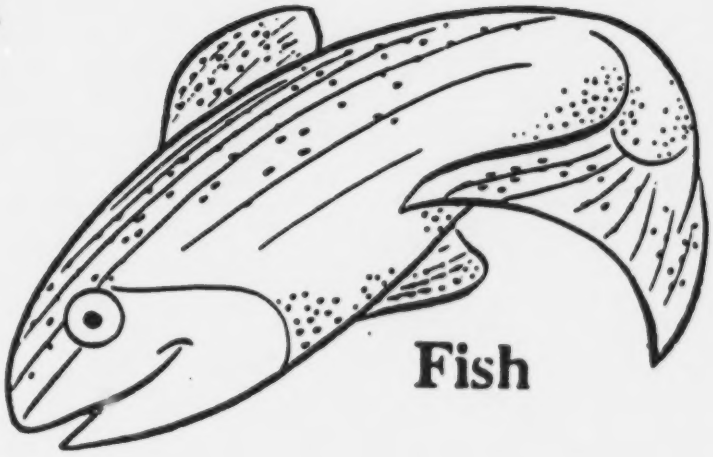
Potato

*WORKSHEET K-C*

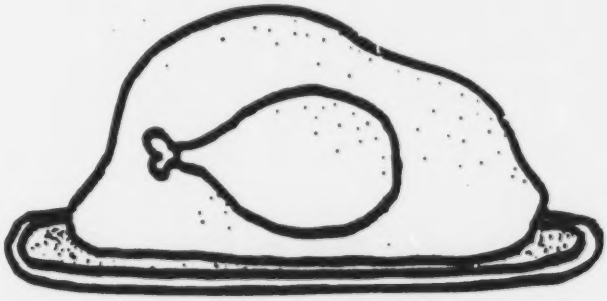
# MEAT GROUP



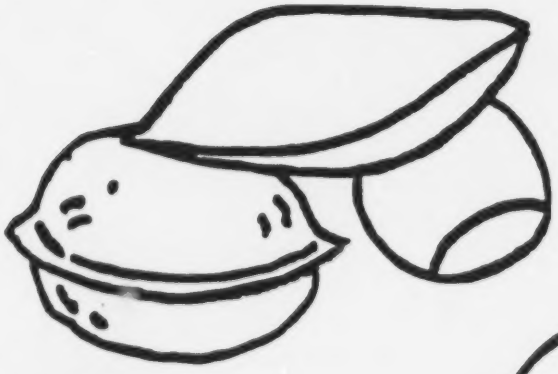
Meat



Fish



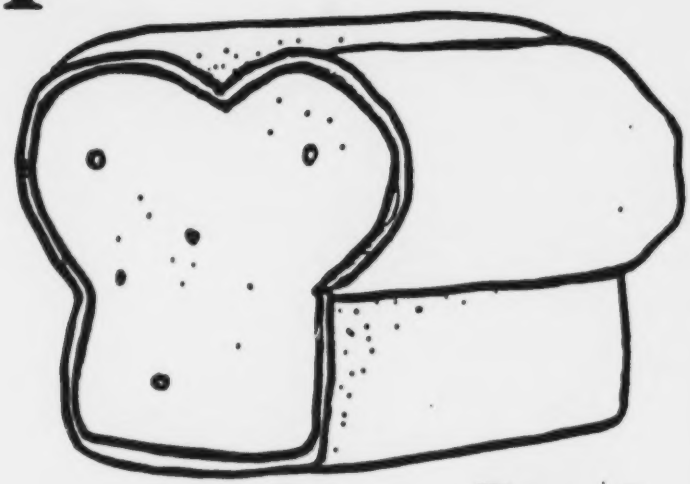
Turkey



Nuts

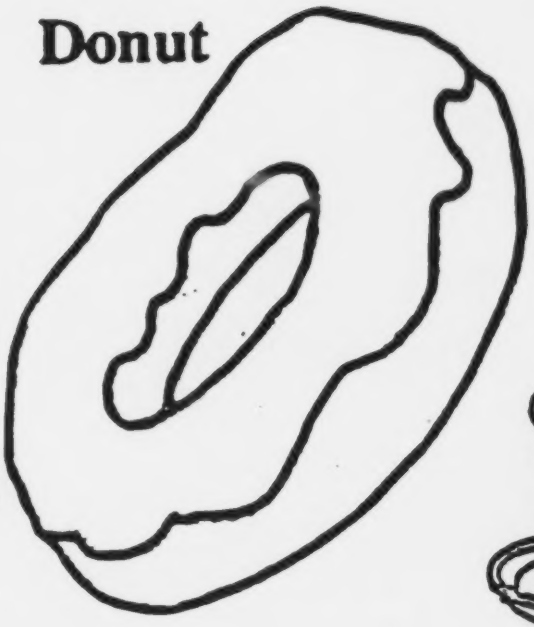
Egg

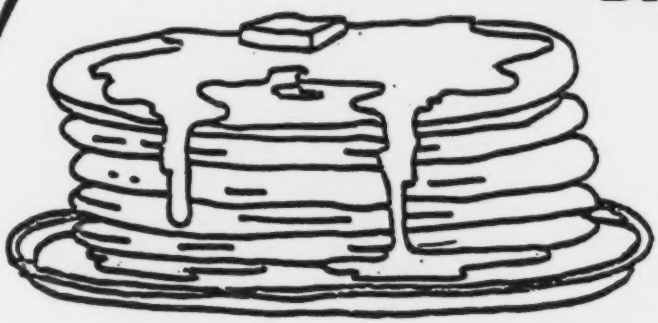
# BREAD - GRAIN GROUP



Bread

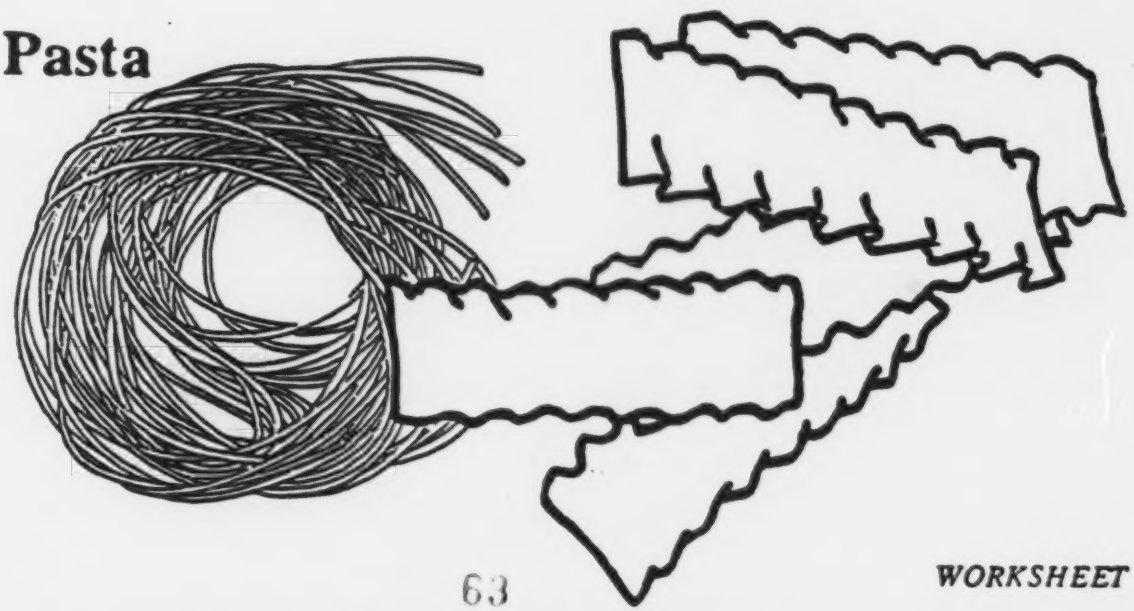
Donut





Pancakes

Pasta



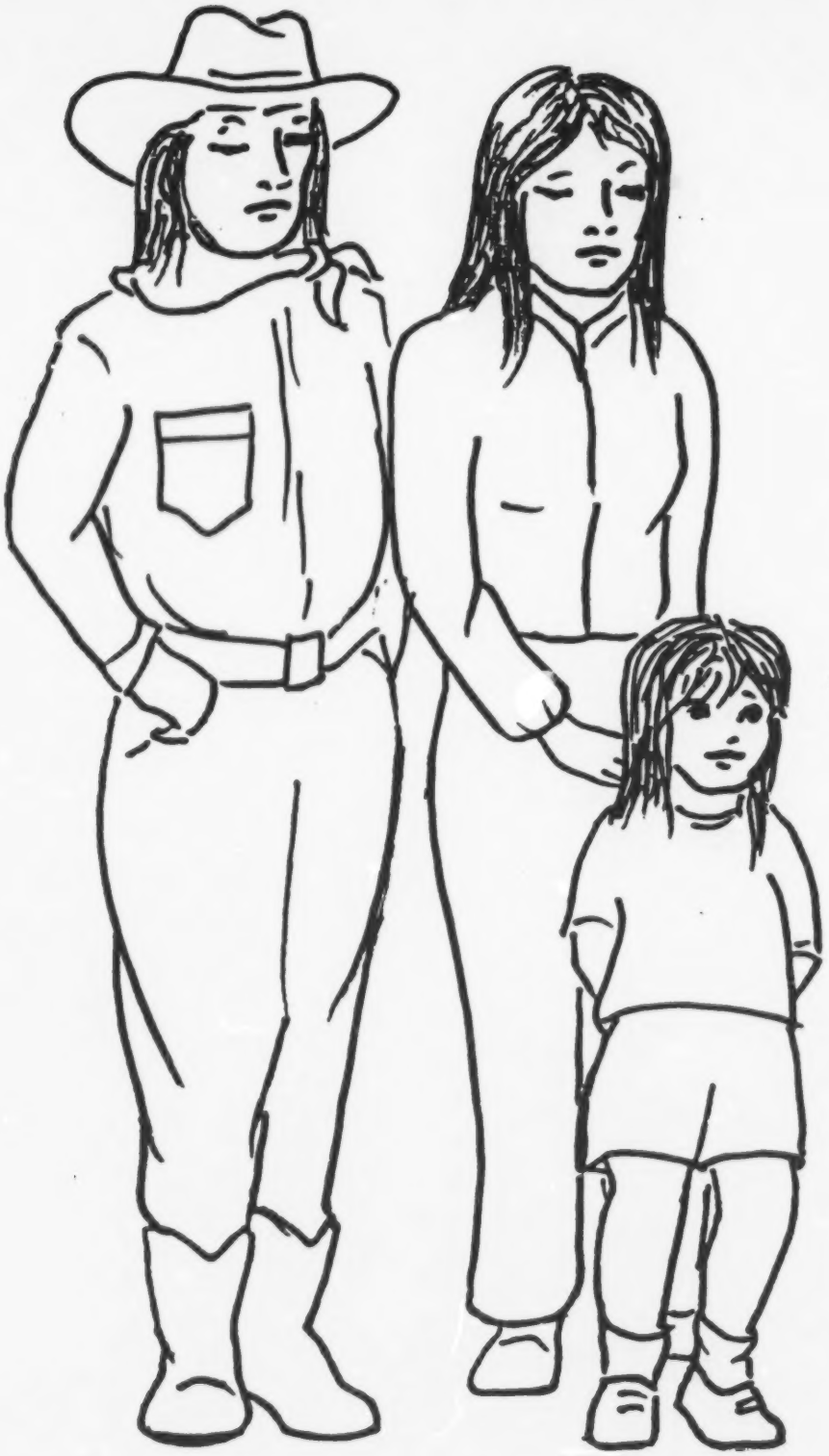
GOAL III: Evaluate the effects of disease on individuals, families, communities, and societies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Recognize that people need friends both when they are well and when they are sick. | Progressive story:<br><br>1. The teacher will begin a short story about a fictional kindergarten student (Jim, Jane, Sue, etc.).<br>- (Jane) woke up late on Monday morning. She didn't have time to eat breakfast and got to school after the bell rang. What will happen to her? How will she feel?<br>- Everyone in Jane's class was busy at a learning center. Jane felt alone. What could you do to help her have a better day?<br><br>NOTE: Teacher and/or students may wish to create additional scenarios for the story. | |

GOAL IV: Recognize the roles and responsibilities of local, state, and national health professionals, organizations, and agencies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Identify health helpers. | 1. Begin a collection of magazine and coloring book pictures of health helpers. Students will create a bulletin board of these and additional pictures they may find. (Worksheets K-F through K-J)<br><br>2. Invite a community health helper to be a guest in the classroom, i.e. nurse, police officer, EMT, pharmacist, fireman, doctor, dentist, or religious leader.<br><br>3. Students will relate personal experiences about visits to the dentist, doctor, pharmacist, or hospital to stay or receive treatment. | |

# Police Officer





# Parents

70

# Dentist

71

# Nurse

72

# Doctor

# First Grade

## FIRST GRADE

**GOAL I: Recognize the causes and characteristics of communicable and noncommunicable diseases.**

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Identify common communicable and noncommunicable diseases.<br><br>2. Describe how common communicable diseases are usually spread. | 1. With the teacher, the students will name diseases familiar to them. Together the class will create a chart which sorts their list into diseases that you can catch and those you can't.<br>Example:<br>colds — heart disease<br>chicken pox — cancer<br>flu — stroke<br>measles — arthritis<br>mumps — diabetes<br>strep throat — asthma<br><br>2. With the teacher, the class will list ways a disease may be "caught". The list should include sneezing, coughing, sharing cups, sharing dishes, sharing silverware, and not washing hands.<br><br>3. With the teacher, the class will make a list of diseases they have experienced. Have the affected students describe how the illness might have been "caught", how he/she felt, how the illness was identified and what treatment occurred. | |

GOAL II: Identify the methods of preventing, treating, and controlling diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Identify and practice healthy behaviors that reduce the spread of communicable diseases. | 1. With direction from the teacher, class members will pantomime healthy behaviors which reduce the spread of communicable diseases, i.e. washing hands, being immunized, using tissue, covering mouth, washing eating utensils between uses.<br><br>2. The class will keep a daily log of personal health behaviors and identify those that were not healthy. Each student will then complete his/her own "My Healthy Promise" pledge. (Worksheet 1-A)<br><br>3. Students will color pictures in HEALTH E OWL COLORING BOOK and discuss the healthy behaviors depicted. | |

# MY HEALTHY PROMISE

I will _____ ,

I will _____ ,

I will _____ ,

I will _____ ,

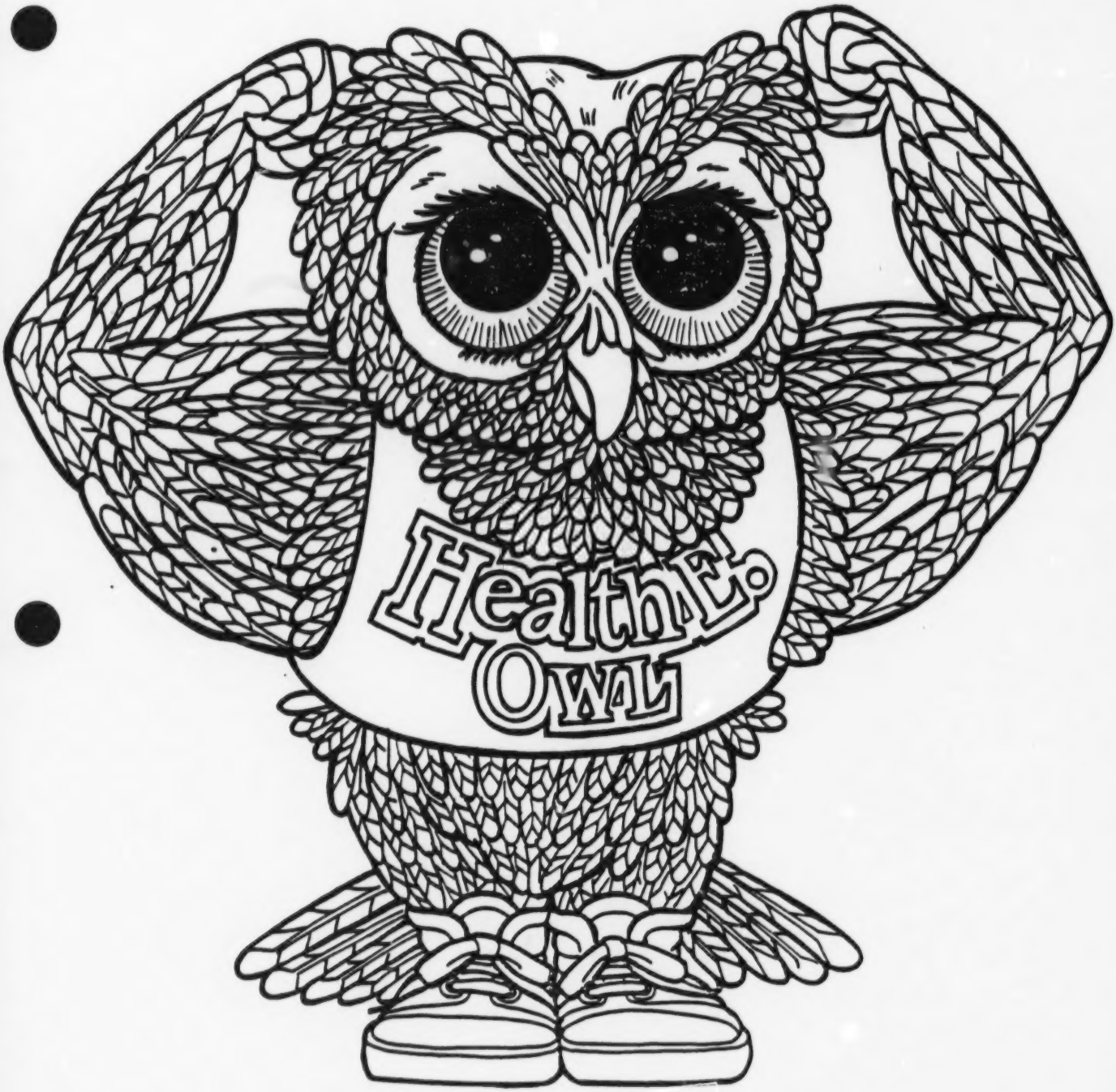
to be a responsible, healthy disease preventer.

_____

Name

GOAL III: Evaluate the effects of disease on individuals, families, communities, and societies.

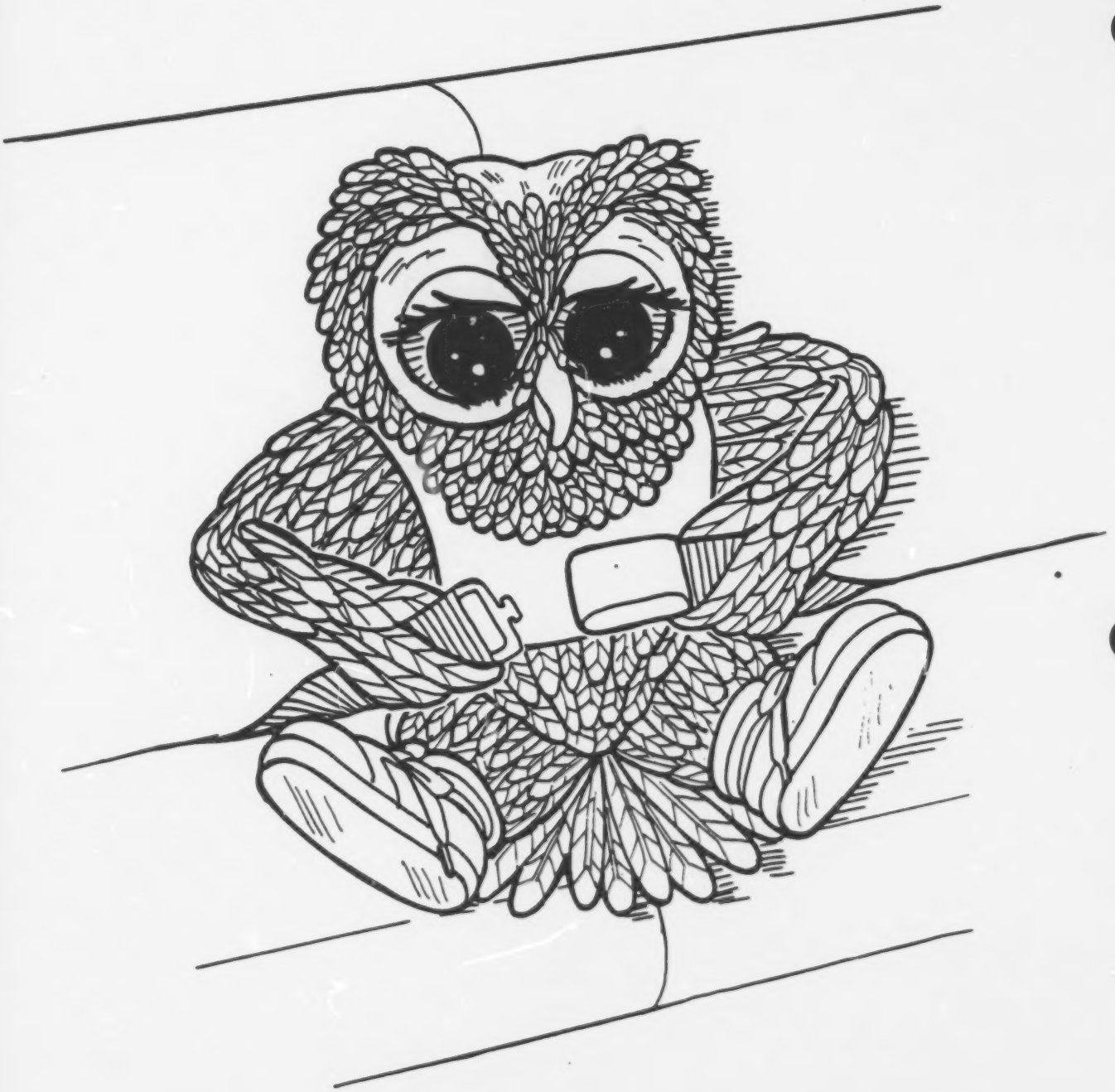
| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Describe how family members show care and help one another during times of illness. | 1. In groups of three or four, students assume various family roles and role play situations in which family members show care and responsibility for one another. Some of these behaviors might include:<br>- helping with chores<br>- playing with a sibling<br>- reading to a family member<br>- making a card or drawing a picture<br>- spending time together<br><br>2. Each student will complete a picture by drawing a family member caring for him/her when sick in bed. The student will then describe what is happening in his/her picture to the class. Make a bulletin board of the students' pictures. (Worksheet 1-B) | |




# COLORING BOOK

Health E. Owl jumps rope for exercise.

Health E. Owl takes a bath every day.



Health E. Owl always buckles his safety belt when riding in a car.

Health E. Owl brushes his teeth after every meal.

Health E. Owl eats 3 good meals a day.

Health E. Owl sleeps at least 8 hours every day.

Distributed to South Dakota Schools with Permission of
South Dakota Division of Education, Pierre, South Dakota

Authorization No. 343379
Tennessee Department of Health and Environment

# When I Am Sick

GOAL IV: Recognize the roles and responsibilities of local, state, and national health professionals, organizations, and agencies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Explain why immunizations are given before entering school. | 1. A nurse could be used as a resource person to discuss immunizations and TB testing with students.<br><br>2. Teachers may wish to cite examples of diseases which have been controlled by immunizations (MMR, small pox, polio).<br><br>3. Students can ask their parents what diseases they are immunized for. The class can make a list of these. | NOTE: The South Dakota Department of Health recommends the following shot schedule: |

| AGE | SHOTS |
|---|---|
| 2 months | DTP and polio |
| 4 months | DTP and polio |
| 6 months | DTP (polio optional) |
| 15 months | measles, mumps, and rubella |
| 18 months | DTP and polio |
| 4- 6 years | DTP and polio |
| 14-16 years | tetanus booster and diptheria booster |

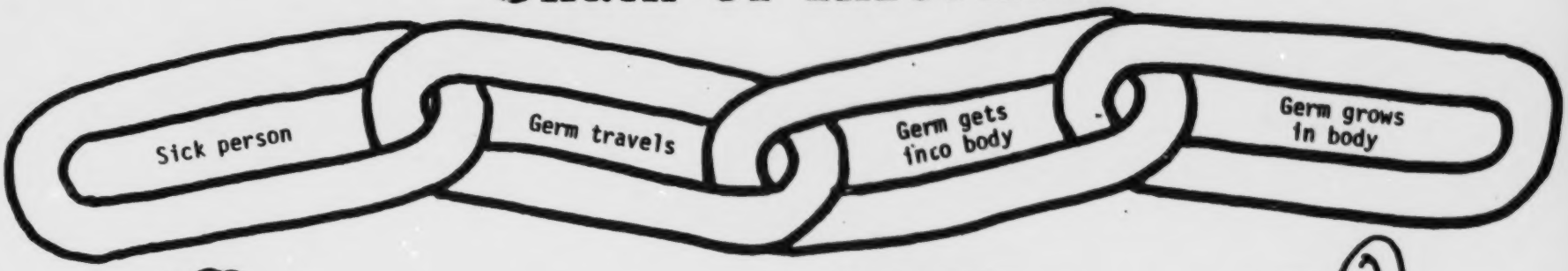
All shots must be up-to-date when a child enters school in September.

# Second Grade

GOAL I: Recognize the causes and characteristics of communicable and noncommunicable diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Understand that communicable diseases are spread from one person to another in a chain effect. | 1. Discuss the concept of a chain; the chain grows as one link comes in contact with another. Disease is spread as people with a communicable disease spread their germs by sneezing, coughing, sharing food, etc. (Worksheet 2-A)<br>The chain is broken when healthy behaviors prevent the spread of germs. Students can complete worksheet as a class. (Worksheet 2-B) | |

# Chain of Infection



Virus
Bacteria
Fungus/Mold
Parasite

Water droplets
- .on hands
- .on food
- .on shared glass
- .in a sneeze
- .in showers

Bad food or water
Carried by an animal
On a shared hat or comb
Jumps from person to person

Through
- .the mouth
- .the nose

Gets into
- .the eyes
- .the ears
- .a cut or sore
- .a bite
- .a needle

Protection
- .the skin
- .tears
- .hair in the nose

No antibodies to it
(if it is a virus)

Body is weak
- .not eating right
- .not enough sleep
- .already sick
- .very upset for a long time

Adapted from AIDS Policies and Instructional Materials with permission of the Delaware Department of Public Instruction





*Worksheet* 2-1

Germs can travel from person to person.
Sometimes germs can make you sick.

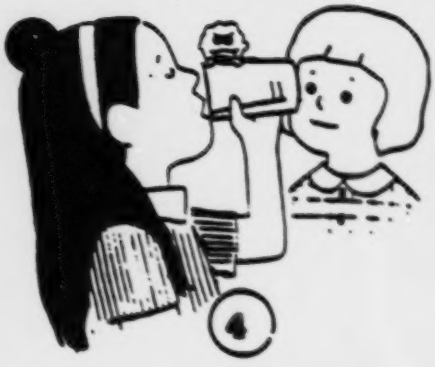
Follow the germ.

Mark an "X" on the germ each place it could have been stopped.

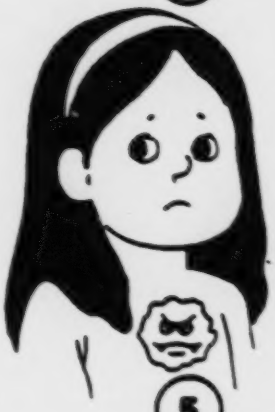
1

2

3



4



5

6

7

8

9

Adapted from AIDS Policies and Instructions, Materials with permission of Delaware Department of Public Instruction

GOAL II: Identify the methods of preventing, treating, and controlling diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Explain how good health habits prevent disease.<br><br>2. Understand personal responsibility in the prevention and control of disease. | 1. Review and reinforce healthy behaviors and how they help to break the disease chain.<br><br>2. Students will complete a list of "I will ..." statements to reflect personal responsibility for good health practices. (Worksheet 2-C) | |

# So That I Can Stay Healthy

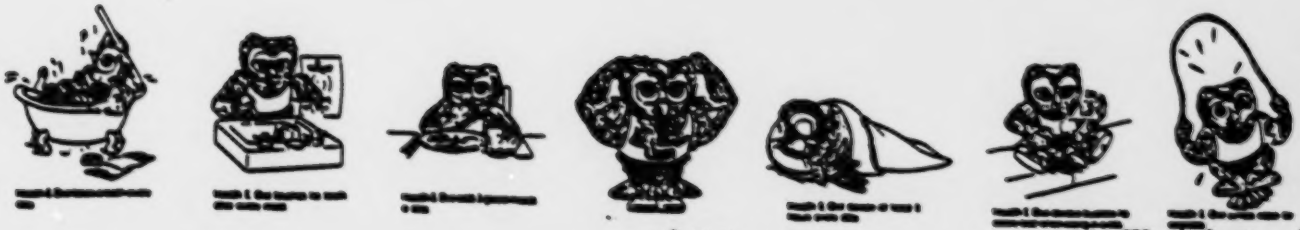
I will _____

I will _____

I will _____

I will _____

Name _____



GOAL III: Evaluate the effects of disease on individuals, families, communities, and societies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Recognize death as a natural step in the life of animals and humans.<br><br>2. Recognize the need to express emotions about death/loss to friends and family. | 1. Compare life cycles of humans and animals with the cycle of a flower.<br><br>2. With the teacher, students will brainstorm ways people express emotions when loss or death occurs. Then students will draw faces which express their emotions at some personal losses. (Worksheets 2-D and 2-E)<br><br>NOTE: Emotions that might be included are sad, worried, afraid, lonely, puzzled, angry, lost, tired, helpless, and sickly.<br><br>3. Students will complete open-ended sentences dealing with feelings such as "I feel happy when ..." and "I feel sad when ..." | NOTE: Guidance counseling program materials are valuable resources for dealing with feelings. |

# How I Feel When I Lose Someone I Love

# How I Feel When I Lose Someone I Love

GOAL IV: Recognize the roles and responsibilities of local, state, and national health professionals, organizations, and agencies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. List local health professionals. | 1. Teachers may wish to use a local phone book or other resource listing community health professionals. Students should be able to name their doctor or source of medical help and whether 911 is used for emergencies. (If 911 is used, students should know responsible use for it.)<br><br>Students will complete activity sheet for emergency phone numbers.<br>(Worksheet 2-F)<br><br>2. Review vocabulary.<br>(Worksheet 2-G)<br>Students will complete vocabulary word puzzle.<br>(Worksheet 2-H) | |

# People who can help me are my SUPPORT SYSTEM. Some of these people are:

NAME: PHONE #:

MOM _____

DAD _____

TEACHER _____

POLICE _____

FIRE _____

DOCTOR _____

HOSPITAL _____

MINISTER _____

HOTLINE _____

_____

_____

_____

_____

_____

_____

_____

_____

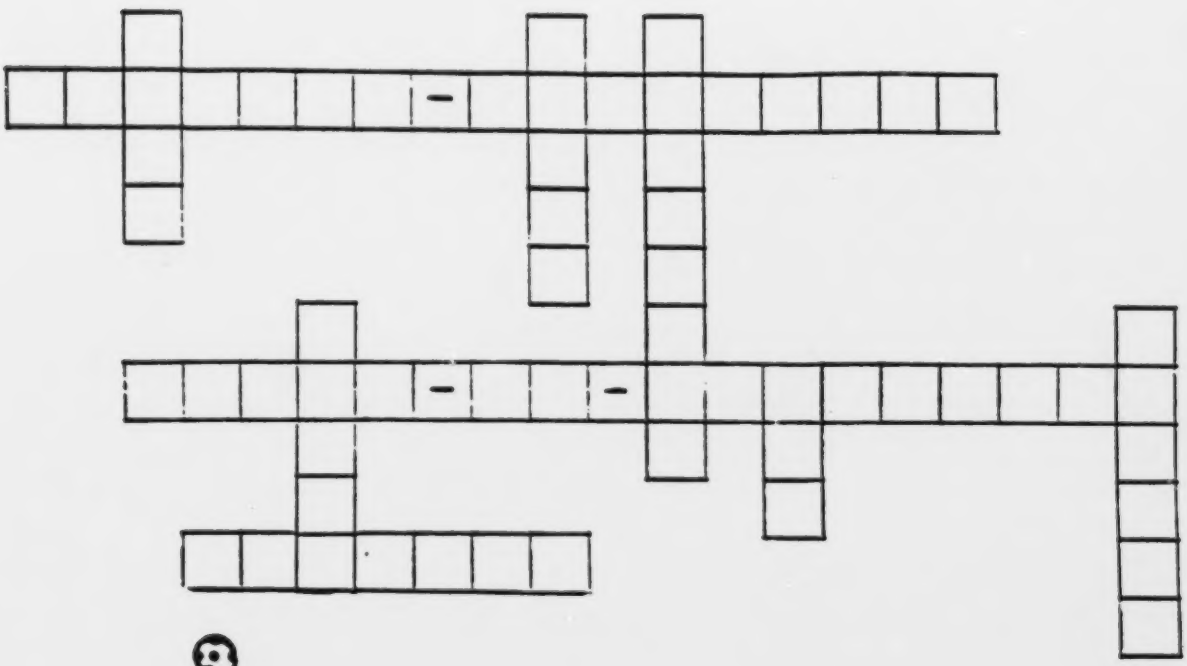
# VOCABULARY

| | |
|---|---|
| BACTERIA | Tiny organisms that can cause disease |
| CHAIN OF INFECTION | The passing of germs from one person to another person |
| DISEASE | An illness |
| HEALTHY BEHAVIOR | Acting in a way that prevents disease |
| VIRUS | The smallest organisms that can only reproduce inside a living cell. They cause diseases. |

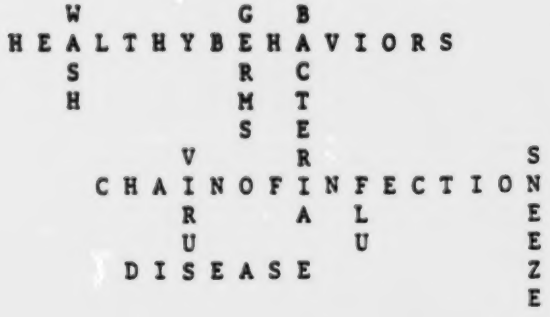
# Word Puzzle

**DIRECTIONS:** Fill in the puzzle with the words underlined in the paragraph below.

Bacteria and viruses are <u>germs</u> that can make me sick. A <u>disease</u> caused by a <u>virus</u> is the <u>flu</u>. A disease caused by <u>bacteria</u> is tooth decay. I should use a tissue over my mouth when I cough or <u>sneeze</u>. I should <u>wash</u> my hands before eating and after going to the bathroom. I should get lots of exercise, eat properly and get plenty of sleep. I should not share the food I am eating or the glass I am drinking out of. If I practice these <u>healthy behaviors</u>, I can break the <u>chain of infection</u> and help keep myself well.



# Answers to Word Puzzle



# Third Grade

## THIRD GRADE

GOAL I: Recognize the causes and characteristics of communicable and noncommunicable diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will: | | |
| 1. Understand that some diseases are caused by microorganisms, including viruses and bacteria. | 1. Teacher will prepare a presentation on bacteria, viruses, and the immune system that meets the developmental needs of students. (Teacher Information pp. 74-75) | |
| 2. Understand that the immune system helps protect the body from disease. | 2. Grow bacteria. (Worksheet 3-A) | |
| | 3. Students will complete a worksheet on the immune system. (Worksheet 3-B) | |

# TEACHER INFORMATION

## BASIC INFORMATION ABOUT BACTERIA

A. What are bacteria?

.Bacteria are tiny, one-celled organisms that have cell walls, but do not have a nucleus. Their nuclear material is dispersed throughout the matter in the cell.
.Bacteria exist in 3 shapes (a) round (cocci); (b) rod-shaped (bacilli); (c) spiral (spirilla).
.Bacteria are found almost everywhere, in the soil, in the air, in water and on or in plants and animals.
.Bacteria reproduce by dividing in two.

B. What are some ways bacteria affect our lives?

.Harmful bacteria
1. Some cause diseases (examples: pneumonia, tooth decay)
2. Some cause food to spoil.

.Helpful bacteria
1. Some take nitrogen from the soil and make nitrogen compounds in the soil that plants need to grow.
2. When plants and animals die, some bacteria break down the remains into simple kinds of matter (decay).
3. Some foods, such as vinegar, cheese, sour cream and tea are made by using bacteria. Bacteria also are used to turn hides into leather and prepare plant fibers used in making linen, canvas and rope.

## BASIC INFORMATION ABOUT VIRUSES

A. What are viruses?

.A virus is a bundle of genes surrounded by a protein coating, carrying instructions for copying itself but without the mechanism for reproduction. Strictly speaking, a virus is not actually alive because it cannot reproduce itself.
.Must invade a living cell to reproduce itself.
.Smaller than any living organism. Smaller than waves of light; can only be seen with scanning electron microscopes.

B. What are some of the ways viruses affect our lives?

.Human diseases:
1. Short-term, usually nonlethat diseases (colds, flu, chicken pox).
2. Long-term, usually nonlethat diseases (herpes).
3. Severe illnesses that may be life-threatening (various forms of hepatitis, AIDS, polio).
4. May be involved in development of some forms of cancer.

.Animal diseases:
1. Can invade livestock, which need to be destroyed if they have certain viral infections, thereby contributing to food shortages.
2. Can invade pets (feline leukemia, rabies and equine encephalitis all kill the animals affected).

.Plant diseases:
1. Destroy food crops and contribute to food shortages.

THREE IMPORTANT CONCEPTS ABOUT THE EFFECTS OF DISEASE-CAUSING MICRO-ORGANISMS

A. These concepts are useful in understanding the different levels at which humans, animals or plants are affected by viruses or other micro-organisms.

.EXPOSURE. Actual physical contact with a disease-causing organism. Exposure does not necessarily mean an individual is infected or develops disease. If a person with a cold nseezes near you, you may be exposed to the virus causing the cold if any airborne moisture droplets from the sneeze reach your own mouth or nose. The cold virus may or may not enter cells in your body, causing infection or disease.

.INFECTION. After exposure, a disease-causing organism may invade cells in your body. This is "infection." Infection does not necessarily mean symptoms will develop. If you are exposed to and then infected with a cold virus, your immune system may be able to stop the infection before symptoms develop. Infected people, whether or not they are symptomatic, are often capable of transmitting the disease-causing organism to others.

.DISEASE. If, after exposure and infection, the invading organism overpowers the immune system, symptoms or disease will appear. Depending on the characteristics of the organism and your own immune system, the disease may be mild or severe.

# GROWING BACTERIA

QUESTIONS:

Why is it important to wash our hands before eating?
What do we mean by sterile?

NEEDED:

Screw-top jars sterilized - 2
(Boil and seal, in class if possible, to show concept of killing germs by boiling and using sterile technique by not touching inside of the top.)
Knife for peeling potatoes - 2
(Boil with jars and place on sterile jar top)
Unpeeled potatoes - 2 (Thoroughly washed with soap and brush and rinsed)

ACTIVITY:

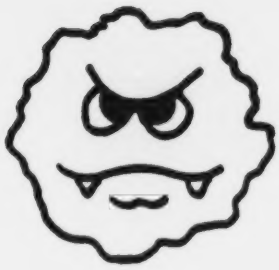
1. Select 2 children, each one to peel a potato and place it in one of the jars.
   One child washes his/her hands thoroughly with soap and water. (Wash twice with a brush, if possible, as do doctors and nurses in surgery.)
   This child is not to touch anything, even the door knob, until he/she has peeled the potato and placed it inside the jar and sealed it.
2. The other child peels potato without his/her hands being washed and places it in other jar. This child also may label the jars, "Hands Washed" and "Hands Unwashed."
3. Place both jars in a warm place and observe daily.

RESULT:

The potato peeled by the unwashed hands will grow such a mass of mold and bacteria colonies that everyone should want to wash hands, avoid putting pencils, etc., in mouth, and handle foods more carefully.
There should be a contrast with the other jar, although it probably wasn't completely "sterile" (germ free) due to the circumstances.

If the gets inside you, you don't always get sick.

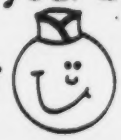
## THERE'S AN ARMY INSIDE YOU TO HELP



**GERMS**

**SOLDIERS**

It's not a real army, but it does help you stay well. The are called ANTIBODIES. Their job is to fight the bad that can sneak into your body.

You must take care of your  . If you do not go to bed on time, your will be tired. If you do not eat well, your will not get the food they need. If you forget to wash your hands, your will have to fight more . Sleepy, hungry can not do a good job for you. The may win. You may get sick.

IMMUNIZATIONS, the shots you need for school, also help you stay well. They give your army new to help fight the .

Your can help you stay well if you take care of them.

GOAL II: Identify the methods of preventing, treating, and controlling diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Identify diseases caused by microorganisms that have been controlled.<br><br>2. Identify personal actions necessary for continued control of these diseases. | 1. With direction from the teacher, the class, either in small groups or as a whole, will brainstorm a list of diseases caused by viruses and bacteria (Teacher Information p. 79)<br><br>2. The class then identifies personal actions needed to control the list of diseases they have generated. | |

# TEACHER INFORMATION

SOME DISEASES CAUSED BY VIRUSES AND BACTERIA

| VIRAL | BACTERIAL |
|---|---|
| Measles (Rubeola) | Pneumonia (bacterial) |
| German Measles (Rubella) | Rheumatic Fever |
| Chicken Pox | Typhoid Fever |
| Herpes Simplex (causes cold sores) | Cholera |
| Small Pox | Whooping Cough |
| Hepatitis A & B | Plague |
| Warts | Diptheria |
| Yellow Fever | Tetanus |
| Rabies | Tuberculosis |
| Influenza | Leprosy |
| Pneumonia (viral) | Tooth Decay |
| Infectious Mononucleosis | Gum Disease |
| Common Cold | Food Poisoning |
| Poliomyelitis | Boils |
| Mumps | Sore Throat |
| AIDS | |

GOAL III: Evaluate the effects of disease on individuals, families, communities, and societies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Understand the effect of an epidemic on a community. | 1. With the teacher, the class will discuss what happens during a flu epidemic, when mumps or measles infect the student population in school, etc. | |

GOAL IV: Recognize the roles and responsibilities of local, state, and national health professionals, organizations, and agencies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Understand that scientists all over the world are trying to find a cure for diseases caused by microorganisms. | 1. Using age-appropriate resources, groups of three to four students will research and present to the class information on scientists who have contributed to disease control. (Examples: Jonas Salk, Louis Pasteur)<br><br>2. Review vocabulary. (Worksheet 3-C) Students will complete vocabulary word search in groups of two. (Worksheet 3-D) | |

# VOCABULARY

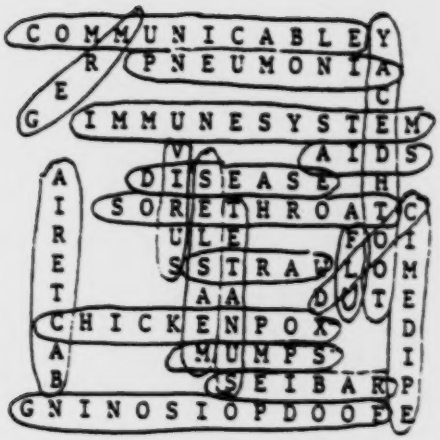
| | |
|---|---|
| ANTIBODIES | Chemicals that destroy disease-causing organisms (germs) that enter the body |
| BACTERIA | Tiny organisms that can cause disease |
| COMMUNICABLE DISEASE | A disease that is passed from one person to another person |
| DISEASE | An illness |
| EPIDEMIC | The fast spreading of a disease affecting many people |
| GERM | Any tiny organism that causes a disease |
| IMMUNE SYSTEM | The body's system of defense against disease and infection |
| VIRUS | The smallest organisms that can only reproduce inside a living cell. They cause diseases. |

# Word Search

CAN YOU FIND ALL OF THESE WORDS IN THE PUZZLE? THEY MAY BE UP, DOWN, ACROSS, DIAGONAL, OR BACKWARDS. CIRCLE EACH WORD AS YOU FIND IT.

AIDS
BACTERIA
CHICKEN POX
COLD
COMMUNICABLE
DISEASE
EPIDEMIC
FOOD POISONING
FLU
GERM
IMMUNE SYSTEM
MEASLES
MUMPS
PNEUMONIA
RABIES
SORE THROAT
TETANUS
TOOTH DECAY
VIRUS
WARTS

C O M M U N I C A B L E Y H
X T R C P N E U M O N I A I
M E B L J M B G K D J Z C K
G N I M M U N E S Y S T E M
Z T A A A V O C H J A I D S
D A L B D I S E A S E S H T
F I S S O R E T H R O A T C
L R N E U U L E V P R F O I
U E N K O S S T R A W L O M
G T F W Z I A A Q C D U T E
M C H I C K E N P O X Q E D
V A R W D J M U M P S F G I
X B E X Y Z H S E I B A R P
G N I N O S I O P D O O F E


COMMUNICABLEY
RPNEUMONIAA
EC
GIMMUNESYSTEM
VAIDS
AIDISEASEH
IS SORETHROATC
RULEFOI
ESSTRAPLOM
TAADOT
CHICKENPOX
AMUMPS
BSEIBAR
GNINOSIOPDOOF
IMEDIPE

# Fourth Grade

## FOURTH GRADE

GOAL I: Recognize the causes and characteristics of communicable and noncommunicable diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Identify AIDS (Acquired Immune Deficiency Syndrome) as a disease that is difficult to get.<br><br>2. Identify AIDS as a disease caused by a virus.<br><br>3. Explain how the AIDS virus attacks the body's immune system. | 1. Pretest class to determine their knowledge of AIDS before formal instruction.<br><br>NOTE: Several sample pretests are provided.<br>(Worksheets 4-A)<br><br>2. Students will discuss the acronym for AIDS.<br>(Worksheet 4-B)<br>Then students will either color a poster of "cartoonized" Acquired Immune Deficiency Syndrome or create a poster of their own.<br>(Worksheets 4-C and 4-D)<br><br>3. Using the information provided, the teacher will present information on the body's immune system to achieve desired student outcomes.<br>(Teacher Information pp. 99-107) | |

**AIDS: THE PREVENTABLE EPIDEMIC**
**GRADES 4-5**

## STUDENT PRE-ASSESSMENT SURVEY

**Directions:**
**Please circle T (true), F (false) to answer the following statements.**

1. T F **People can give each other infections.**

2. T F **AIDS is caused by a virus.**

3. T F **You can protect yourself from many infections.**

4. T F **AIDS can be cured.**

5. T F **Children who attend school with someone who has AIDS can catch the infection.**

**Complete the sentences below.**

6. **I want to learn about AIDS because**_____

_____

_____

7. **The questions I have about AIDS are**_____

_____

_____

8. **What do you think AIDS is?**_____

_____

_____

9. **List ways AIDS is spread.**_____

_____

_____

10. **What do you think, "AIDS: The Preventable Epidemic," means?**_____

_____

_____

Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

**TEACHER'S KEY** **AIDS: THE PREVENTABLE EPIDEMIC**
**STUDENT PRE-ASSESSMENT SURVEY**

**GRADES 6-8**

**Directions:**
Please circle T (true), F (false) to explain the following statements.

1. (T) F People can give each other infections.

   Explain: Communicable diseases are passed from person to person. They can spread through the air like colds, through direct contact like head lice, and through sexual contact as in syphilis and AIDS.

2. (T) F AIDS is caused by a virus.

   Explain: AIDS is caused by a virus. Human immunodeficiency virus is spread by unsafe sexual contact and/or exposure to blood. Once the virus enters the body, it can compromise the immune system to the point that a person develops other serious infections.

3. (T) F You can protect yourself from infection.

   Explain: To maintain health, one can make responsible decisions about behaviors such as saying no to sex and drugs. Washing hands after bathroom use and before eating are also responsible behaviors that prevent infections. Following appropriate infection control measures will also protect you and prevent hepatitis B or AIDS virus spread from blood exposure. Proper diet and exercise are essential in health maintenance.

4. T (F) AIDS can be cured.

   Explain: There is no cure for AIDS. Education to encourage healthy behaviors is the tool to prevent AIDS.

5. T (F) Children who attend school with someone who has AIDS can catch the infection.

   Explain: The AIDS virus is spread through unsafe sexual contact and exposure to blood. AIDS is not spread through casual contact.

Complete the following sentences.

6. I want to learn about AIDS because

   (Student responses could include that they want to stay healthy and/or help others.)

7. The questions I have about AIDS are

   (These questions can be used to help you identify the focus of information.)

8. What do you think AIDS is?

   (Answers might include a disease that effects the body's immune system, a disease without a cure or other more detailed explanations.)

9. List ways AIDS is spread.

   (Student responses should detail risk behaviors such as needle sharing.)

10. What do you think, "AIDS: The Preventable Epidemic," means?

    (Responses could include that AIDS can be prevented through healthy choices or other prevention strategies they've learned.)



BEST COPY AVAILABLE

# AIDS PRETEST

(Circle "T" for "True" or "F" for "False" for each statement below.)

| True | False | | |
|---|---|---|---|
| T | F | 1. | AIDS is a disease you are born with (inherited). |
| T | F | 2. | The cause of AIDS is unknown. |
| T | F | 3. | AIDS can be gotten from shared needles. |
| T | F | 4. | AIDS cannot be gotten by giving blood. |
| T | F | 5. | You cannot catch AIDS by sitting next to a person with AIDS. |
| T | F | 6. | There is a test to tell if a person has AIDS. |
| T | F | 7. | A person with AIDS must tell an employer he or she has the disease. |
| T | F | 8. | If you are not sexually promiscuous and do not use illegal drugs, you have little risk of getting AIDS. |
| T | F | 9. | Homosexuals are the only people who get AIDS. |
| T | F | 10. | There is a cure for AIDS. |

Reproduced from AIDS Policies and Instructional Materials with permission of Delaware Department of Public Instruction

## ANSWER SHEET

## AIDS PRETEST

(Questions 3, 4, 5, and 8 are "True", the rest are "False".)

1. False - AIDS is acquired or caught. Infants can acquire AIDS prior to or during birth from infected mothers.

2. False - AIDS is caused by a virus - HIV (Human immunodeficiency syndrome)

3. True - There is a major concern over the drug users, many of whom share needles.

4. True - AIDS can be gotten by receiving infected blood but <u>not</u> by giving blood.

5. True - AIDS is not transmitted by shaking hands, a door knob, toilet seats, or by casual contact.

6. False - The test only tells if a person has been exposed to AIDS and has antibodies to the AIDS virus--not if the person has AIDS.

7. False - AIDS is a medical problem protected by confidentiality and privacy laws.

8. True - These are the greatest risks of transmission.

9. False - Intraveneous drug users, sexual partners, children born to infected parents, and blood to blood product recipients are at risk.

10. False - At the present time there is no known cure. Treatment is aimed at the opportunistic infections that occur with AIDS since the immune system is affected.

## WHAT DO YOU KNOW ABOUT AIDS

DIRECTIONS: Circle either T (True) or F (False)

| | | | |
|---|---|---|---|
| 1. | AIDS is caused by a virus. | T | F |
| 2. | You can get AIDS by going to school with a person who has AIDS. | T | F |
| 3. | Only males get AIDS. | T | F |
| 4. | You can get AIDS from swimming pools. | T | F |
| 5. | There is a cure for AIDS. | T | F |
| 6. | You can get AIDS by donating blood. | T | F |
| 7. | Most people can protect themselves from getting AIDS. | T | F |
| 8. | Most people who have AIDS got it by sexual intercourse. | T | F |
| 9. | You can get AIDS by hugging. | T | F |
| 10. | People who inject drugs into themselves can get AIDS that way. | T | F |

ANSWERS TO PRETEST

1. True
2. False
3. False
4. False
5. False
6. False
7. True
8. True
9. False
10. True

## PRETEST

Please respond to each statement by placing an __X__ in the most appropriate column.

| | TRUE | FALSE | DON'T KNOW |
|---|---|---|---|
| 1. AIDS IS CAUSED BY A VIRUS. | ___ | ___ | ___ |
| 2. ANTIBODIES ARE MADE IN RESPONSE TO AN ANTIGEN. | ___ | ___ | ___ |
| 3. ALL PEOPLE INFECTED WITH AIDS LOOK AND FEEL SICK. | ___ | ___ | ___ |
| 4. AIDS IS A PREVENTABLE DISEASE. | ___ | ___ | ___ |
| 5. PEOPLE WITH AIDS ARE PERMANENTLY QUARANTINED. | ___ | ___ | ___ |
| 6. AIDS IS TRANSMITTED BY SHAKING HANDS. | ___ | ___ | ___ |
| 7. PEOPLE WITH AIDS CAN BE CURED WITH MEDICAL CARE. | ___ | ___ | ___ |
| 8. A VACCINE TO PREVENT AIDS IS NOW AVAILABLE. | ___ | ___ | ___ |
| 9. PEOPLE WHO SHARE NEEDLES ARE AT RISK TO GET AIDS. | ___ | ___ | ___ |
| 10. AIDS CAN BE SPREAD BY HOMOSEXUAL INTERCOURSE. | ___ | ___ | ___ |
| 11. AIDS CAN BE SPREAD BY HETEROSEXUAL INTERCOURSE. | ___ | ___ | ___ |
| 12. AIDS CAN BE SPREAD IN FOOD. | ___ | ___ | ___ |
| 13. AIDS CAN BE TRANSMITTED FROM A PREGNANT INFECTED MOTHER TO HER UNBORN CHILD. | ___ | ___ | ___ |
| 14. THE NAMES OF AIDS PATIENTS ARE KEPT CONFIDENTIAL. | ___ | ___ | ___ |

15. WHERE HAVE YOU LEARNED THE MOST ABOUT AIDS: (CHECK ONE)

___MAGAZINE/NEWSPAPER
___RADIO/TV
___BOOKLET/PAMPHLET
___FILM/VIDEO
___LECTURE/TALK
___OTHER (SPECIFY)_____

## ANSWERS TO PRETEST

1. True
2. True
3. False
4. True
5. False
6. False
7. False
8. False
9. True
10. True
11. True
12. False
13. True
14. True

NAME_____DATE_____CLASS_____

ACTIVITY: AIDS - Basic Fact Finding

DIRECTIONS:

Write your answers to the following questions.

WHAT HAVE YOU HEARD ABOUT AIDS?

_____

_____

HOW DOES A PERSON GET THE AIDS VIRUS?

_____

_____

HOW DO YOU PREVENT AIDS?

_____

_____

HOW DID YOU FIND OUT ABOUT AIDS?

_____

_____

WHAT QUESTIONS DO YOU HAVE ABOUT AIDS?

_____

_____



Reproduced from Preventing AIDS Through Education with permission of the Minnesota Department of Education

*Worksheet 4*

**A** — **Acquired,** *from someone else.*

**I** — **Immune,** *the body's defense system.*

**D** — **Deficiency,** *decreased defense.*

**S** — **Syndrome,** *a set of clinical and laboratory results.*

-
  **cquired**
-
  **mmune**
-
  **eficiency**
-
  **yndrome**

cquired

mmune

eficiency

yndrome

# TEACHER INFORMATION

**AIDS: THE PREVENTABLE EPIDEMIC**
**GRADES 4-5**

## THE IMMUNE SYSTEM

The immune system protects the body from infection. Barriers such as skin and mucous membranes (linings of the inside of the mouth, nose, etc.) that prevent germs from entering the body are an important part of the immune system. Another important part of the immune system is the white blood cell. White blood cells are microscopic and circulate throughout the body in the blood stream. There are many types of white blood cells. Different types have different functions such as engulfing ("eating") bacteria or producing antibodies, which are substances that help kill germs like viruses and bacteria.

## ACTIVITY 1 - HEALTHY IMMUNE SYSTEM

| | | |
|---|---|---|
| Roles: | Immune System | 6-8 students |
| | Germs | 2-3 students |
| | Antibodies | 2-3 students |
| | Narrator | 1 student |

Students can use body movement to demonstrate the function of a healthy immune system. Tell students to act out how the immune system works. Split students into groups and have them select their roles. They can form an immune system circle by joining hands. The narrator can stand inside this circle to symbolize how a person's immune system protects one from illness. As germs approach the immune system, persons playing antibodies go out, attach to them, and bring them back to the immune system. As long as the immune system remains intact (the circle remains unbroken) the immune system is able to kill the germ when it comes in contact with it. The immune system remains intact and the person maintains his/her health.

## HUMAN IMMUNODEFICIENCY VIRUS

Human immunodeficiency virus (HIV) is the name of a virus that is able to infect and kill white blood cells. If enough of these cells are killed, the infected person is no longer able to fight off infections. Eventually, even relatively harmless germs that exist normally in the human body are able to cause life-threatening illnesses. When this happens the person is said to have acquired immunodeficiency syndrome, or AIDS.

Reproduced from AIDS: The Preventable Epidemic, with permission of the Oregon State Health Division

# TEACHER INFORMATION

***Background***

This lesson contains two diagrams of the "Chain of Infection." One is blank and is meant to serve as a generic model. The other is filled in to illustrate the chain of infection for measles. The "Chain of Infection" is designed to help you and your students to recognize how a disease is spread and how the spread of disease can be stopped by breaking the chain at various points.

In the instance of measles, the chain can be broken by the infected person by:

- covering the nose and mouth when sneezing or coughing.

It can be broken by the noninfected person by:

- avoiding contact with secretions
- immunization.

The focus of this lesson is twofold; a person is responsible for:

- breaking the chain of infection in order not to *spread* a disease to others
- breaking the chain of infection in order not to *catch* the disease from others.

***Teacher Vocabulary***

**Host** – Any person in whom an infectious agent can live and multiply.

**Immunization** – Method of producing resistance to an infectious disease, usually by vaccination or inoculation.

**Infectious agent** – An organism (virus, bacteria, etc.) that is capable of producing infection or infectious disease.

**Method of entry** – Manner in which organisms enter the host's body.

**Method of escape** – Manner in which organisms leave the host's body.

**Mode of transmission** – Manner in which an infectious agent is transmitted from one person to another.

**Organism** – Any living thing, such as a virus, bacteria, etc.

**Susceptible host** – A person not possessing sufficient resistance against a particular organism to prevent contracting the infection when exposed to the organism.

***Syllabus Connection***

**VI Diseases and Disorders** – understanding diseases and disorders and taking actions to prevent or eliminate their development. (pp. 28-29)

***Values Integration***

**Respect for self**/caring for and protecting oneself by taking appropriate steps to break the chain of infection

**Respect for others**/caring for and protecting others by taking appropriate steps to avoid the spread of infection



Reproduced from AIDS Instructors Guide with permission of the New York Department of Education



BEST COPY AVAILABLE

| | |
|---|---|
| **Objective** | There are some diseases that are communicable diseases. |
| **Learner Outcome** | Understand the chain of infection and how to break it. |
| **Comprehensive Health Education Topic(s)** | VI Diseases and Disorders |
| **Values Integration** | Respect for Self: Caring for and protecting oneself by taking appropriate steps to break the chain of infection.<br><br>Respect for Others: Caring for and protecting others by taking appropriate steps to avoid the spread of infection. |

---

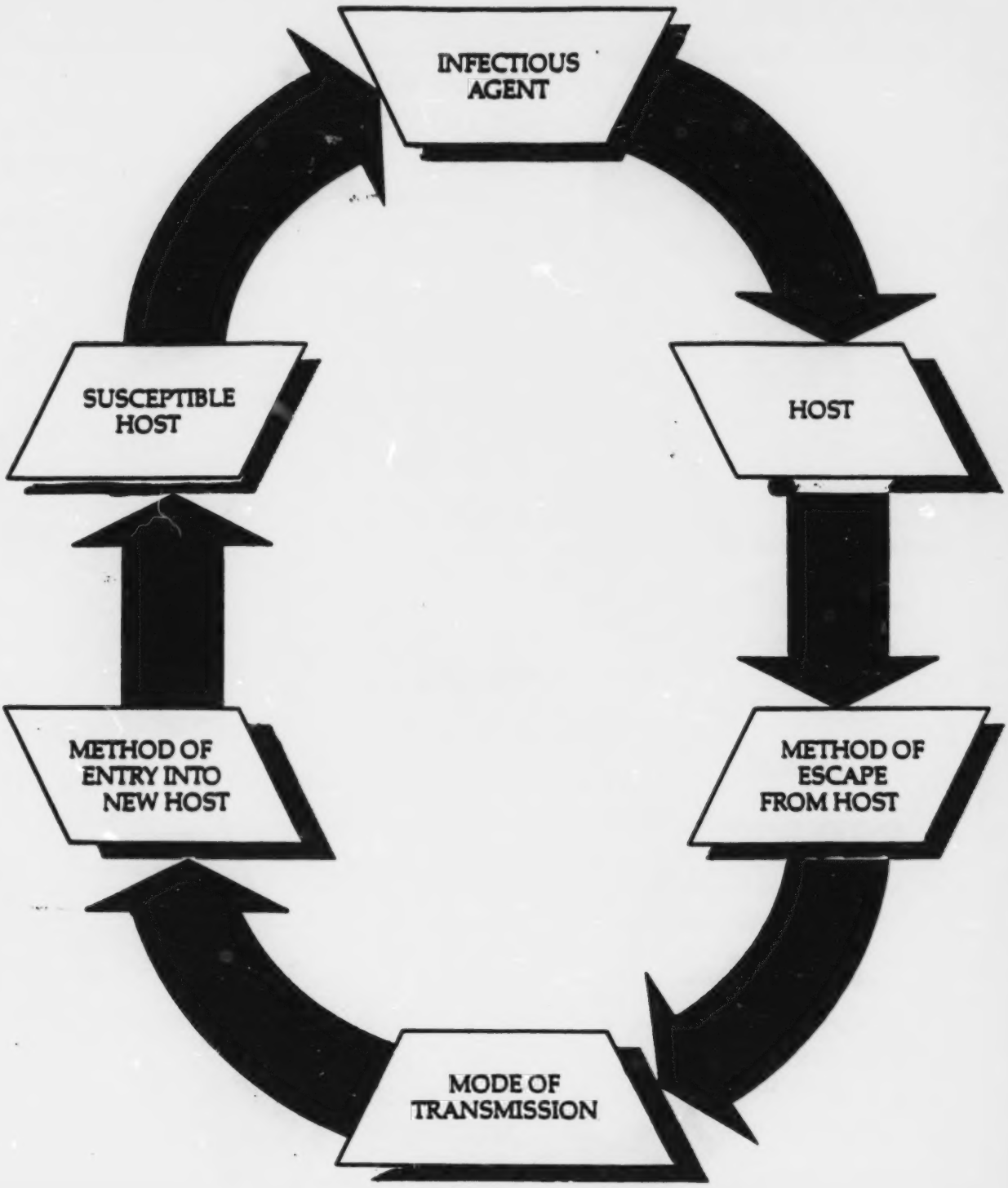
| | |
|---|---|
| **Motivating Activity** | The teacher, with students, will chart the chain of infection. |
| **Identification** | Students will identify the chain of infection:<br>• infectious agent<br>• host<br>• method of escape from host<br>• mode of transmission<br>• method of entry into new host<br>• susceptible host |
| **Effective Communication** | Students will chart the chain of infection for measles. |
| **Decision Making** | Students will decide how one can break the chain of infection. |

---

| | |
|---|---|
| **Positive Health Behaviors** | Students will demonstrate behavior that seeks to break the chain of infection:<br>• cover nose and mouth<br>• avoid contact with secretions from the human host<br>• obtain appropriate immunization |

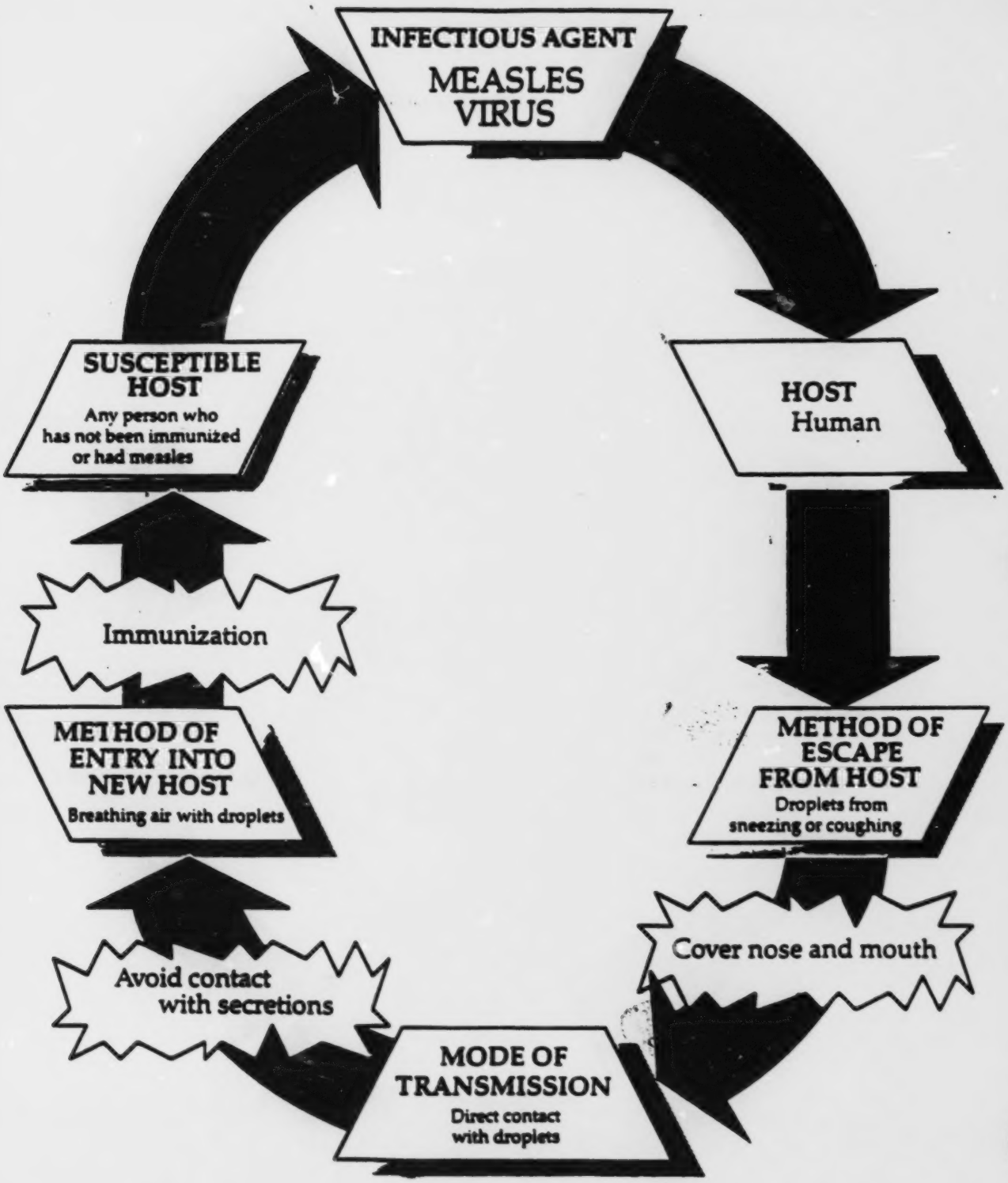
Reproduced from AIDS Instruction Guide with permission of the New York Department of Education

# CHAIN OF INFECTION




Reproduced from AIDS Instruction Guide with permission of the New York Department of Education

# CHAIN OF INFECTION
## FOR MEASLES




Reproduced from AIDS Instruction Guide with permission of the New York Department of Education

# TEACHER INFORMATION

**Background**

Students need to recognize that with ordinary infections (such as a cold) the body's immune system creates antibodies that kill the virus. During this time the person may feel ill, run fever, etc., but the illness passes and the immune system remains intact and able to fight off other diseases as they occur.

With AIDS (Acquired Immune Deficiency Syndrome) the Human Immunodeficiency Virus (HIV) invades the immune system, which is unable to kill HIV; it is HIV that makes deficient or destroys the immune system. So while a person may feel ill, run fever, etc., and antibodies are created, in the instance of AIDS, the immune system no longer can fight off other diseases as they occur. The patient does not die of AIDS but of an opportunistic infection or disease that the body can no longer fight.

This lesson helps students to distinguish between a healthy immune system (with a large supply of T-cells) that fights off a cold and an immune system with AIDS (with insufficient T-cells) unable to fight off opportunistic infections. Thus, people with AIDS are more likely to contract infections than others. (See diagram.)

**Special Considerations**

This lesson is best taught after students have studied science or health topics related to the immune system. If this is not possible, the lesson should be presented at another grade level after basic immune system information has been learned.

**Teacher Vocabulary**

**AIDS** – The initials for the disease "Acquired Immune Deficiency Syndrome." A disease caused by a virus which breaks down the body's immune system, making it vulnerable to opportunistic infections and cancer.

**Antibodies** – Substances in the blood produced by the body's immune system to fight against invading organisms.

**HIV** – The Human Immunodeficiency Virus. It causes AIDS by attacking the body's immune system, making infected people vulnerable to fatal infections, cancer, and neurological disorders.

**Immune system** – A body system that helps fight off invading organisms and disease.

**Lymphocyte** – A type of white blood cell that is produced in the bone marrow. Some of these cells migrate to the thymus, where they develop as T-cells. Other lymphocytes that mature in the bone marrow or in organs other than the thymus are called B-cells. The B-cells manufacture antibodies, and the T-cells regulate antibody production. In healthy people about 60 percent of circulating lymphocytes are T-cells. With AIDS, only about 2 percent of the lymphocytes are T-cells. With fewer T-cells, the body is unable to recognize and attack invading organisms.

**Opportunistic Infection** – An infection caused by a microorganism that rarely causes disease in persons with a normal immune system.

**T-cells** – A class of lymphocytes that play a major role in carrying out the activities of the immune system. Some T-cells are called helper T-cells.

**Virus** – A microscopic organism that can cause infections.

**Syllabus Connection**

**I Human Growth and Development** – knowing the human body and understanding the characteristics and natural progression of development in the life cycle for taking actions that promote health at each developmental stage. (pp. 18-19)

**VI Diseases and Disorders** – understanding diseases and disorders and taking actions to prevent or limit their development. (pp. 28-29)

**Values Integration**

**Respect for self/proper attention and care for one's health and well-being**

**Respect for self/promoting optimum health through personal behavior**

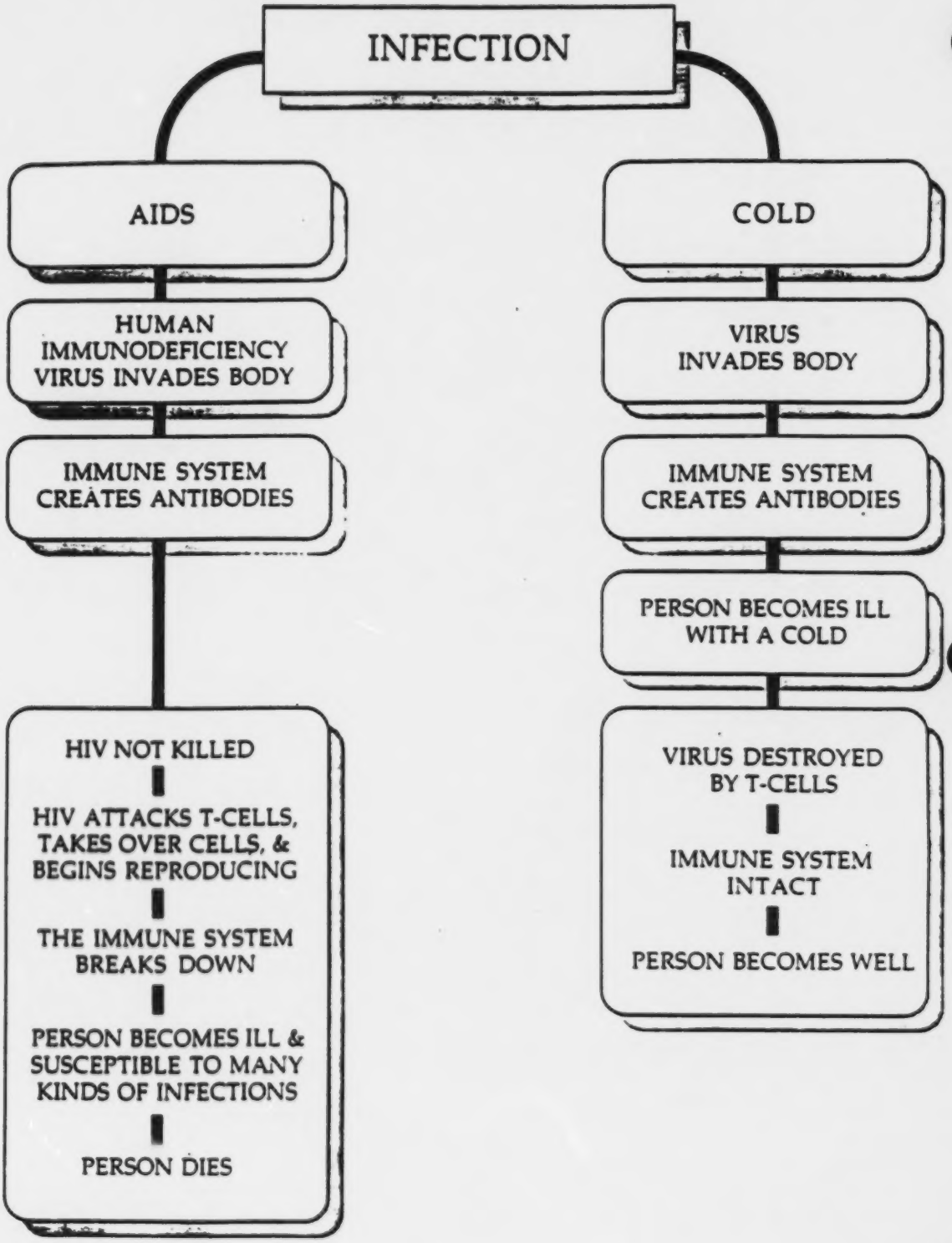
Reproduced from AIDS Instruction Guide with permission of the New York Department of Education





BEST COPY AVAILABLE

# THE IMMUNE SYSTEM


INFECTION
AIDS
HUMAN IMMUNODEFICIENCY VIRUS INVADES BODY
IMMUNE SYSTEM CREATES ANTIBODIES
HIV NOT KILLED
HIV ATTACKS T-CELLS, TAKES OVER CELLS, & BEGINS REPRODUCING
THE IMMUNE SYSTEM BREAKS DOWN
PERSON BECOMES ILL & SUSCEPTIBLE TO MANY KINDS OF INFECTIONS
PERSON DIES
COLD
VIRUS INVADES BODY
IMMUNE SYSTEM CREATES ANTIBODIES
PERSON BECOMES ILL WITH A COLD
VIRUS DESTROYED BY T-CELLS
IMMUNE SYSTEM INTACT
PERSON BECOMES WELL

# TEACHER INFORMATION

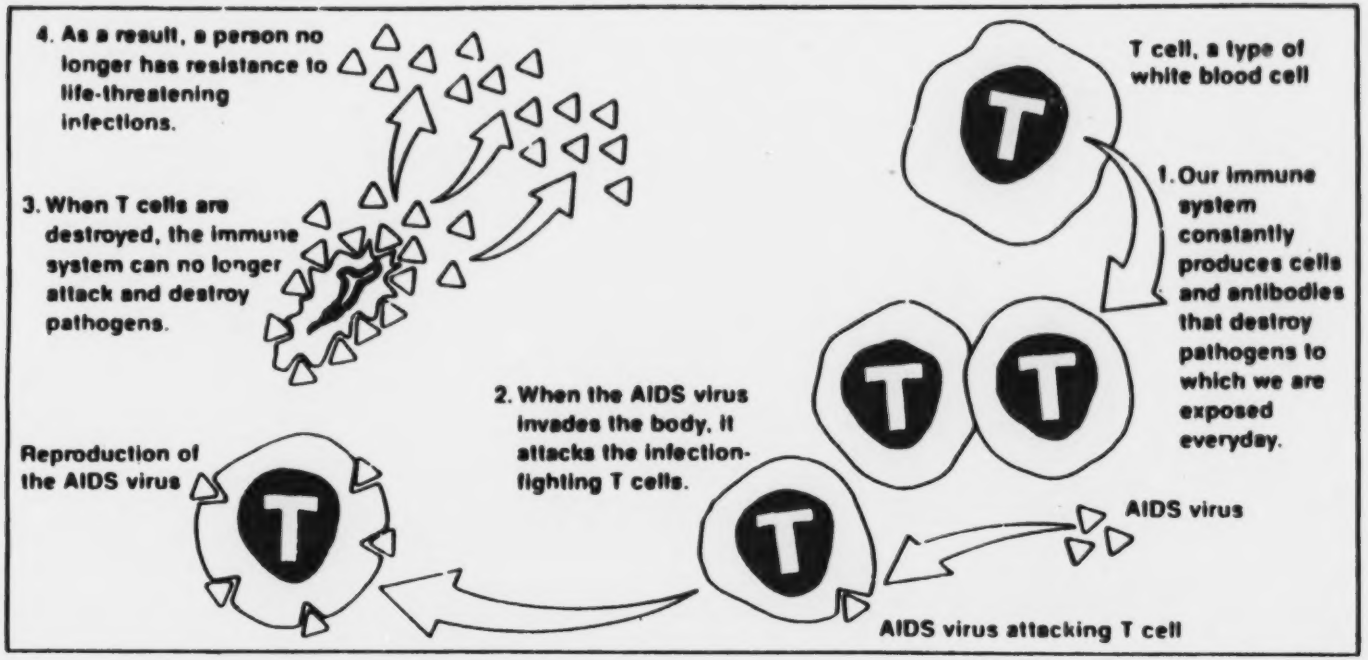
| | |
|---|---|
| **Objective** | AIDS is a communicable disease. |
| **Learner Outcome** | Understand the body's immune system. |
| **Comprehensive Health Education Topic(s)** | VI Diseases and Disorders |
| **Values Integration** | Respect for Self: Proper attention and care for one's health and well-being.<br>Respect for Self: Promoting optimum health through personal behavior. |

| | |
|---|---|
| **Motivating Activity** | The teacher will diagram the immune system as a defense system against disease. |
| **Identification** | Students will identify the body's immune system as a mechanism that helps fight disease.<br>Students will identify how the immune system responds to:<br>• a cold<br>• AIDS |
| **Effective Communication** | Students will describe how the body responds to these different infections. |
| **Decision Making** | Students will decide how they can protect their immune system by reducing exposure to infections. |

| | |
|---|---|
| **Positive Health Behaviors** | Students will reduce their own exposure to infection. |



Reproduced from AIDS Instructional Guide with permission of the New York Department of Education


4. As a result, a person no longer has resistance to life-threatening infections.
3. When T cells are destroyed, the immune system can no longer attack and destroy pathogens.
T cell, a type of white blood cell
1. Our immune system constantly produces cells and antibodies that destroy pathogens to which we are exposed everyday.
2. When the AIDS virus invades the body, it attacks the infection-fighting T cells.
Reproduction of the AIDS virus
AIDS virus
AIDS virus attacking T cell

Attack of a T cell by the AIDS virus

AIDS - What You Should Know
by Linda Meeks and Philip Heit.
Morrill Publishing Company, 1988.



Reproduced from AIDS Policies and Instructional Materials with permission of Delaware Department of Public Instruction

GOAL II: Identify the methods of preventing, treating, and controlling diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Understand personal responsibility in seeking accurate health information.<br><br>2. Discuss common misunderstandings about the transmission of the AIDS virus. | 1. a. The teacher, with the class, will list resources for accurate health information i.e., community health nurse, school nurse, doctor, clinic or hospital personnel, library, etc.<br>b. The teacher will write each resource on a card. Teams of students will play charades using the cards.<br><br>2. Students will complete a myth/fact sheet.<br><br>NOTE: Several sample myth/fact sheets are provided. (Worksheets 4-E)<br><br>3. Students will make a "How AIDS is Spread" chart. (Worksheet 4-F) | |

# AIDS MYTH-FACT SHEET

PLACE A T IN FRONT OF THOSE STATEMENTS THAT ARE TRUE AND AN F IN FRONT OF THOSE STATEMENTS THAT ARE FALSE.

____ 1. PEOPLE CAN GET AIDS BY BEING IN THE SAME ROOM WITH A PERSON WITH AIDS.

____ 2. THERE IS A VACCINE TO PREVENT AIDS.

____ 3. AIDS IS TRANSMITTED BY SNEEZING.

____ 4. A PERSON CAN GET AIDS BY GIVING BLOOD.

____ 5. THE AIDS VIRUS CAN BE TRANSMITTED THROUGH SEXUAL CONTACT WITH AN INFECTED INDIVIDUAL.

____ 6. PEOPLE CAN LOOK AND FEEL HEALTHY AND STILL TRANSMIT THE AIDS VIRUS.

____ 7. PEOPLE WHO SHOOT DRUGS AND SHARE THE NEEDLE CAN GET AIDS.

____ 8. AN INFECTED MOTHER CAN TRANSMIT THE AIDS VIRUS TO HER UNBORN CHILD.

____ 9. PEOPLE CAN GET THE AIDS INFECTION FROM SHARING A SODA.

____ 10. WOMEN CANNOT TRANSMIT THE AIDS VIRUS.



Adapted from AIDS Teaching Guide with permission of the State of Pennsylvania Department of Health

## ANSWERS TO MYTH - FACT SHEET

1. Myth
2. Myth
3. Myth
4. Myth
5. Fact
6. Fact
7. Fact
8. Fact
9. Myth
10. Myth

NAME_____DATE_____CLASS_____

ACTIVITY: AIDS - Myth or Fact

DIRECTIONS:

Place and M in front of the statements that is a Myth (a statement that is not true). Place an F in from of the statements that are Facts. Discuss them in class when completed.

_____ The AIDS virus can be spread by casual kissing.

_____ AIDS is a disease solely of male homosexuals.

_____ A mother with AIDS can transmit the virus to her unborn child.

_____ AIDS is spread through sharing body fluids infection with the virus.

_____ AIDS is a communicable disease.

_____ You can get AIDS by sitting next to someone with AIDS.

_____ A person with AIDS needs help and understanding.

_____ The AIDS virus attacks the body's immune system.

_____ Intravenous drug users are at risk for contracting the AIDS virus.

_____ People get AIDS by donating blood.

_____ There is no cure for AIDS.

NOTE TO EDUCATOR:
Purpose: Clarify accurate information about AIDS.
Learner Outcomes: 13,14,18,20,22
Directions: Allow for discussion among students, using a nonjudgmental approach, yet clarifying mythinformation. Ask students to write statements for each other to assess for myth or fact. Review with students common sources of myths and where to seek accurate information.
KEY: M M F F F M F F F M F



Reproduced from Preventing AIDS Through Education with permission of the Minnesota Department of Education

NAME_____DATE_____CLASS_____

ACTIVITY: AIDS: Myth or Fact

DIRECTIONS:

We've all picked up a lot of information about AIDS. Some of it may be misinformation. Which of the following statements about AIDS do you think are really true? Write true or false on the line provided. Add statements to clarify true statements when needed and correct false statements.

_____ 1. For most people with AIDS in the US, the AIDS virus has been transmitted through heterosexual contact with infected persons.

_____ 2. There is no risk of acquiring AIDS from a blood transfusion.

_____ 3. You can get AIDS from donating blood.

_____ 4. Knowing your sexual partner and their past practices will help prevent the spread of AIDS.

_____ 5. Using birth control pills will prevent the spread of AIDS.

_____ 6. Using a condom will reduce the risk of the spread of AIDS.

_____ 7. AIDS is a disease only gay men acquire.

_____ 8. Being near a person in school who has AIDS can be a risk for transmission of the AIDS virus to you.

_____ 9. Washing your hands often can help destroy the AIDS virus.

_____ 10. You should make sure tiolet seats are clean in order to not spread the AIDS virus.

_____ 11. A person who has no symptoms of AIDS can be a carrier of the AIDS virus.

_____ 12. When handling blood or other body fluids, using a barrier will establish a buffer of safety from contact with the AIDS virus.

NOTE TO EDUCATOR:
Purpose: Review misconceptions about AIDS.
Learner Outcomes: 13,14,20,22,27
Directions: Use in small groups so students can work together to verify and correct statements. This is an activity where the students can learn to critique statements carefully and to appreciate precise and accurate information.
Key: 1-F, 2-T, 3-F, 4-T, 5-F, 6-T, 7-F, 8-F, 9-T, 10-F, 11-T, 12-T

Reproduced from Preventing AIDS Through Education with permission of the Wisconsin Department of Education

## HOW AIDS IS SPREAD

DIRECTIONS: Draw a chart with two columns. Title one column "How We Get AIDS". Title the second column "How We Don't Get AIDS". Cut out cards and paste each card in the correct column.

| | | |
|---|---|---|
| KISSING SOMEONE | EXCHANGING BLOOD WITH SOMEONE | TOILET SEATS |
| DOOR KNOBS | SEXUAL CONTACT | SHAKING HANDS |
| BEING A BABY OF A MOTHER WITH THE AIDS VIRUS | SHARING TOYS | SNEEZING ON SOMEONE |
| SHARING HYPODERMIC NEEDLES | INSECT BITES | SWIMMING POOLS |
| WORKING TOGETHER | HUGGING SOMEONE | DISHES OR SILVERWARE |

| | | |
|---|---|---|
| KISSING SOMEONE | EXCHANGING BLOOD WITH SOMEONE | TOILET SEATS |
| DOOR KNOBS | SEXUAL CONTACT | SHAKING HANDS |
| BEING A BABY OF A MOTHER WITH THE AIDS VIRUS | SHARING TOYS | SNEEZING ON SOMEONE |
| SHARING HYPODERMIC NEEDLES | INSECT BITES | SWIMMING POOLS |
| WORKING TOGETHER | HUGGING SOMEONE | DISHES OR SILVERWARE |

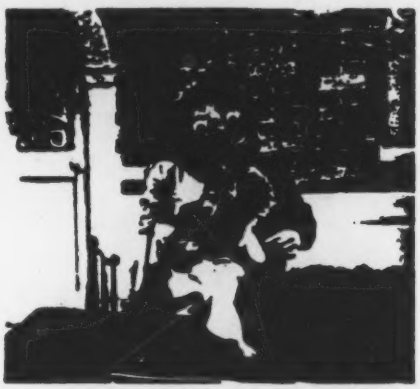
## FOURTH GRADE

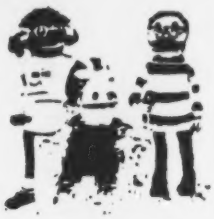
GOAL III: Evaluate the effects of disease on individuals, families, communities, and societies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Discuss how lack of accurate information leads to anxiety, uncertainty, and fear. | 1. Arrange for a "Kids on the Block" presentation.<br><br>NOTE: Contact the State Library in Pierre for information at (605)773-3131. (Teacher Information pp. 116-118) | |

# TEACHER INFORMATION

# NEWS RELEASE





## THE KIDS ON THE BLOCK INTRODUCES A NEW PROGRAM ON AIDS

"Natalie Gregg" is the newest of The Kids on the Block characters. She is twenty-five years old, married, and has AIDS. She discusses her condition with one of her oldest friends, puppet character "Joanne Spinoza", and through her, Natalie talks about the myths and misconceptions about the disease.

Designed especially for students in fifth grade through high school and appropriate for all types of public education programs, Natalie talks about the specifics of the disease and important prevention issues such as:

- abstinence - "Sex is very private and very personal and for when you're grown . . ."
- transmission - "The best way to keep from getting AIDS is not to do drugs and not to have sex, but then when you decide to have sex, have it with just one person for the whole rest of your life . . ."
- safer sex - "Although it's not one hundred percent fool proof, using a condom is one way to keep from getting AIDS."

As in all Kids on the Block programs (they number 33 now) children talk directly with the puppets and ask questions to Natalie about what it's like to have AIDS and what the issues surrounding AIDS mean to them.

Created by special educator, Barbara Aiello, "Natalie" joins other Kids on the Block characters such as "Mark Riley" (cerebral palsy), "Diane Delaney" (cancer), "Brenda Dubrowski" (child of divorced parents) and "Sharyn Greene" (teen pregnancy), to work with community members of all ages all around the world.

The puppets are available for purchase and to date there are over 900 Kids on the Block programs in 49 states and 14 countries.

The AIDS program will be available in January 1988. The cost is $1,475 for puppets, scripts, props and follow-up activities.

For more information call: Richard L. Dolph or Suzanne S. Shupe at The Kids on the Block, Inc. (301) 290-9095 or 1-(800) 368-KIDS.

**The Kids on the Block, Inc.**
9385-C Gerwig Lane • Columbia, Maryland 21046 • (301) 290-9095
Toll Free 800-368-KIDS - Continental USA except Maryland



BEST COPY AVAILABLE

Sponsored by

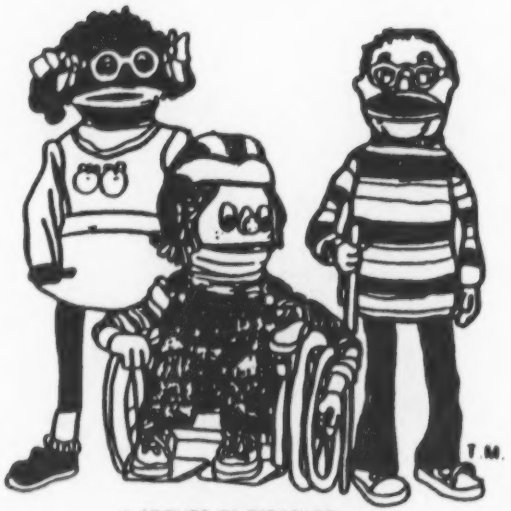
Sertoma Clubs of South Dakota

South Dakota Department of Health
Maternal and Child Health Program

South Dakota Association for the
Education of Young Children

Together for Children

# THE KIDS ON THE BLOCK

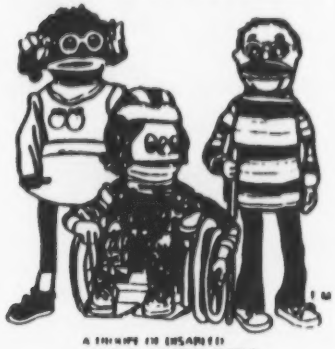


A TROUPE OF DISABLED AND NON-DISABLED PUPPETS

# WOULD LIKE TO VISIT YOU!

South Dakota State Library
800 Governors Drive
Pierre, S.D. 57501

# THE KIDS ON THE BLOCK



A GROUP OF DISABLED
AFRICAN AMERICAN PUPPETS

## Group A-1

**Matt** is 11 yrs old and has cerebral palsy. He is very bright & has been mainstreamed for the first time this year.

**Mary's** is 12 yrs old and has been deaf from birth. She uses sign language and enjoys teaching it to others.

**Jimmy** is 10 years old and has emotional problems. He spends part of his day on a resource room to help him learn appropriate behaviors.

**Michael** is Mark's identical twin brother. He expresses the problems, concerns and special rewards of being a sibling of a disabled child.

**Brenda** is 10 yrs old and an only child. Brenda's self image suffers because she thinks she is fat.

**Melody** is 9 yrs old and has four older brothers who tease her and call her "four eyes."

## Group A-2

**Ronaldo** is 9 yrs old and goes to school with Brenda and Mel. Ronaldo has been blind from birth and loves going to school with non disabled kids.

**Miss Jane** is 19 yrs old and is retarded. She has graduated from school and has a job as a veterinarian's assistant.

**Jennifer** has a learning disability. She is mainstreamed into a regular classroom and spends part of the day in a resource room.

**Brenda** is 10 yrs old and an only child whose parents are divorced. Brenda goes to counseling to help her deal with the confusion and strong feelings associated with her parents' divorce.

**Melody** is 9 yrs old and has four older brothers who tease her and call her "four eyes."

The Kids on the Block - a group of life sized puppets, are designed to teach the school aged child what it's like to be handicapped. The shows are authentic, believable, educational and entertaining. The program is available on loan to individuals who have received SDAEYC certified training. Communities in South Dakota interested in the program may fill out the form at right for more information on how to obtain training or sponsor a performance in their area.

## Group B

**Shane** is a gentle 11 yr old who has leukemia. Her cancer is in remission and she is more than willing to share with the other kids what it's like to have leukemia.

**Jackie** is 14 yrs old and has spina bifida. She openly discusses her disability, tells her friends about her braces & crutches, & is trying out for cheerleader this year.

**Jenny** is 14 and has been sexually abused. She is worried about her complexion and dealing with her feelings about abuse.

**Stephanie** is 9 yrs old and has been physically abused. He describes his experiences, how he told his teacher about it & the help his family received.

**Tam** is 11 yrs old & is Vietnamese. He talks about his cultural differences.

**Sarah** is 13 and has a prosthetic arm with a hook. She likes all kinds of sports.

**Christine** is 12 and has diabetes. She speaks candidly about diabetes and eating healthy food.

**Kevin** is a 12 yr old with epilepsy. He talks about seizures and what it feels like to have one.

## Group C

**Eric** is 14 years old & has been through a drug treatment center. Eric knows this was a good choice for him but faces difficulty when confronted with his former best friend who assumes Eric will resume his old drug habits.

**Paul** Friends since grade school, Eric & Paul began taking drugs to be "cool." As a result of Paul's continuing drug problem, he has trouble dealing with friends, family, and most everything else. A vicious circle makes these problems the reasons he keeps using drugs.

**Jeanne** is Paul's 14 yr old girlfriend who believes Eric is exaggerating the seriousness of Paul's problem.

**Valerie** is 14 and has a sister who went through a drug treatment center and shares her experiences with Jeanne. Val has spina bifida and her sense of feeling different has helped her understand to value one's self.

---

**Group A-1**
orthopedically handicapped
deaf
sibling
emotional dist

**Group A-2**
blind
mentally retarded
learning disabled
divorce

**Group B**
leukemia
spina bifida
sexual abuse
physical abuse
cultural diff
prosthetic arm
diabetes
epilepsy

**Group C**
Substance abuse—a special hour length program recommended for grades 5-8

_____ We would like to utilize a professional troupe in our community.

_____ We are interested in forming a troupe in our community.

Name _____

Address _____

City _____

State _____ Zip _____

Phone _____

Return to South Dakota State Library
800 Governors Drive
Pierre, SD 57501-2294

Phone Toll Free 1-800-592-1841
Local 773-3131



BEST COPY AVAILABLE

## FOURTH GRADE

GOAL IV: Recognize the roles and responsibilities of local, state, and national health professionals, organizations, and agencies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Identify local resources which provide accurate information about AIDS. | 1. The teacher will supply local community resource information.<br><br>2. Review vocabulary. (Worksheet 4-G)<br>Students will complete vocabulary word search. (Worksheet 4-H) | |

# VOCABULARY

| | |
|---|---|
| ACQUIRED | To get or come to have |
| AIDS | Acquired Immune Deficiency Syndrome |
| ANTIBODIES | Substances that are produced in response to an antigen |
| BACTERIA | A micro-organism that can cause disease |
| BEHAVIOR | The way a person acts |
| CHAIN | A series of things linked together |
| COMMUNICABLE | Can be transmitted directly or indirectly to another person |
| DEFICIENCY | Not having enough of something that is needed |
| DISEASE | A particular destructive process in an organ or organism with a specific cause and symptoms; an illness |
| EPIDEMIC | The fast spreading of a disease affecting many people |
| FACT | Something that exists or is true |
| GERM | Any tiny organism that causes a disease |
| HEALTHY | Free from illness or disease |
| IMMUNE | Having a high degree of resistance to a disease |
| INFECTION | Contaminated with a germ |
| MYTH | A belief that has no basis in fact |
| NON-COMMUNICABLE | A disease that cannot be passed from one person to another |
| SYNDROME | A group of related problems or symptoms |
| SYSTEM | A group of things acting together |
| T CELLS | A type of white blood cell that helps fight infection by triggering the production of antibodies |
| VIRUS | The smallest organisms. They can only reproduce inside a living cell. They cause diseases. |

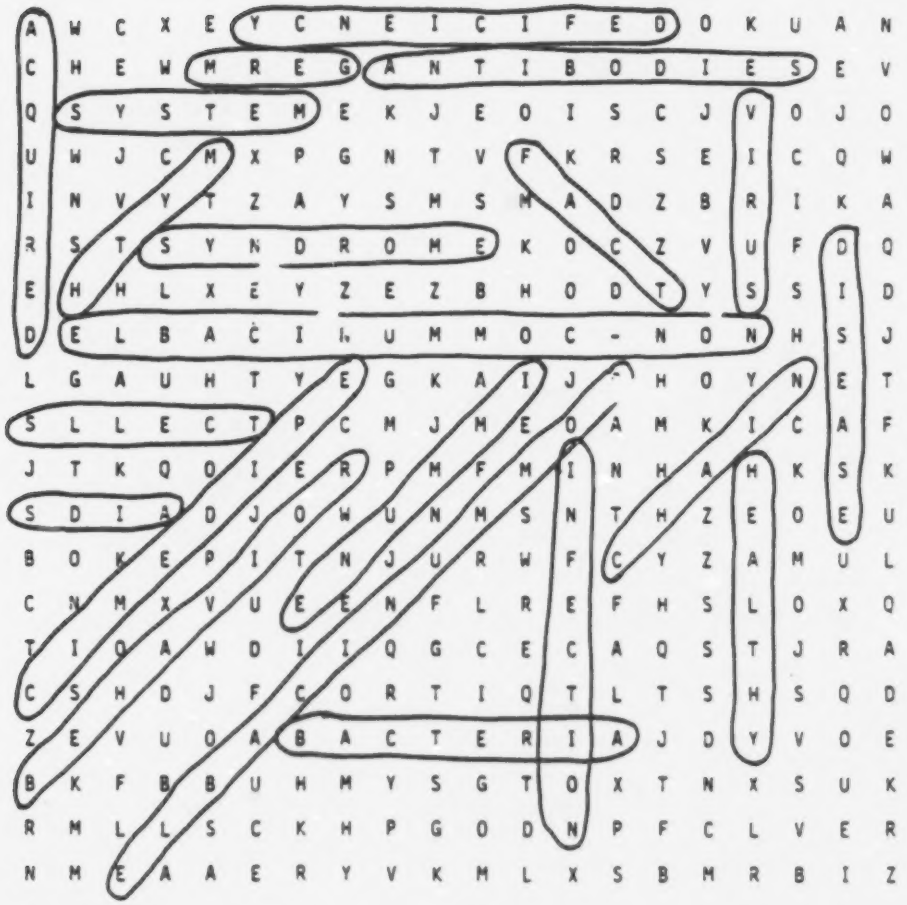
# Word Search

CAN YOU FIND ALL OF THESE WORDS IN THE PUZZLE? THEY MAY BE UP, DOWN, ACROSS, DIAGONAL, OR BACKWARDS. CIRCLE EACH WORD AS YOU FIND IT.

ACQUIRED
AIDS
ANTIBODIES
BACTERIA
BEHAVIOR
CHAIN
COMMUNICABLE
DEFICIENCY
DISEASE
EPIDEMIC
FACT
GERM
HEALTHY
IMMUNE
INFECTION
MYTH
NON-COMMUNICABLE
SYNDROME
SYSTEM
TCELLS
VIRUS

A W C X E Y C N E I C I F E D O K U A N
C H E W M R E G A N T I B O D I E S E V
Q S Y S T E M E K J E O I S C J V O J O
U W J C M X P G N T V F K R S E I C Q W
I N V Y T Z A Y S M S M A D Z B R I K A
R S T S Y N D R O M E K O C Z V U F D Q
E H H L X E Y Z E Z B H O D T Y S S I D
D E L B A C I N U M M O C - N O N H S J
L G A U H T Y E G K A I J C H O Y N E T
S L L E C T P C M J M E O A M K I C A F
J T K Q O I E R P M F M I N H A H K S K
S D I A D J O W U N M S N T H Z E O E U
B O K E P I T N J U R W F C Y Z A M U L
C N M X V U E E N F L R E F H S L O X Q
T I O A W D I I Q G C E C A Q S T J R A
C S H D J F C O R T I Q T L T S H S Q D
Z E V U O A B A C T E R I A J D Y V O E
B K F B B U H M Y S G T O X T N X S U K
R M L L S C K H P G O D N P F C L V E R
N M E A A E R Y V K M L X S B M R B I Z

# Answers to Word Search


A W C X E Y C N E I C I F E D O K U A N
C H E W M R E G A N T I B O D I E S E V
Q S Y S T E M E K J E O I S C J V O J O
U W J C M X P G N T V F K R S E I C Q W
I N V Y T Z A Y S M S M A D Z B R I K A
R S T S Y N D R O M E K O C Z V U F D Q
E H H L X E Y Z E Z B H O D T Y S S I D
D E L B A C I L U M M O C - N O N H S J
L G A U H T Y E G K A I J - H O Y N E T
S L L E C T P C M J M E O A M K I C A F
J T K Q O I E R P M F M I N H A H K S K
S D I A D J O W U N M S N T H Z E O E U
B O K E P I T N J U R W F C Y Z A M U L
C N M X V U E E N F L R E F H S L O X Q
T I Q A W D I I Q G C E C A Q S T J R A
C S H D J F C O R T I Q T L T S H S Q D
Z E V U O A B A C T E R I A J D Y V O E
B K F B B U H M Y S G T O X T N X S U K
R M L L S C K H P G O D N P F C L V E R
N M E A A E R Y V K M L X S B M R B I Z

# Fifth Grade

## FIFTH GRADE

GOAL 1: Recognize the causes and characteristics of communicable and noncommunicable diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will: | 1. This topic is usually addressed at the fifth-grade level in most school systems' health or science curriculum. | |
| 1. Explain the structure and function of the reproductive system. | | |

## FIFTH GRADE

GOAL II: Identify the methods of preventing, treating, and controlling diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will: | 1. Students will learn to identify risks and consequences in order to develop strategies for prevention. (Teacher Information pp. 126-131) | |
| 1. Discuss the importance of making responsible decisions that promote good health. | | |

# TEACHER INFORMATION

**AIDS: THE PREVENTABLE EPIDEMIC**
**GRADES 4-5**

The first lesson explores the importance of making healthy decisions and preventing risks. These are two key components in the prevention of many diseases including AIDS. Students will learn to identify risks and consequences in order to develop strategies for prevention. Responsible decision making methods are presented as a foundation for the prevention of many risks and consequences students will be confronted with now and in the future. The concepts of risks, consequences and prevention are an important theme to reinforce throughout the entire unit.

**RESPONSIBLE DECISION MAKING**

Listed below are the five steps of responsible decision making. Present the information using vocabulary and phrases appropriate to the level and understanding of your students.

1. Identify the problem or situation.

2. Identify ways to deal with the problem.

3. Apply criteria for responsible decision making to each alternative:

   Would the results of my decision be healthful?
   Would the results of my decision be safe?
   Would the results of my decision be legal?
   Would the results of my decision show respect for myself and others?
   Would the results of my decision follow my parents's or guardian's guidelines?

4. Make a responsible decision and act upon it.

5. Evaluate your actions.



Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

# TEACHER INFORMATION

**AIDS: THE PREVENTABLE EPIDEMIC**
**GRADES 4-5**

**OBJECTIVES:**

The learner will demonstrate the ability to

- Analyze a list of risk and no risk behaviors that can jeopardize one's health.
- Synthesize risk behaviors and methods for their prevention.

**MATERIALS:**

"Risk, No Risk" Student Worksheet, Page

**VOCABULARY:**

Risk, consequence, prevention, responsible, decision, respect

**PROCEDURES:**

1. Write the word **RISK** on the board or overhead projector and ask students to brainstorm the meaning of the concept. List several ideas and define. Repeat this procedure with the words **CONSEQUENCES** and **PREVENTION.**

2. Tell the students that the purpose of today's lesson is to demonstrate how, by avoiding risks, one can prevent the consequences of unhealthy behavior.

3. Divide the class into partners or small groups. Tell students to read the items on the worksheet and decide what behaviors pose a risk to one's health.

4. When the students finish with the first directive, allow discussion time as a class about the risks, whether individual group members agreed and disagreed and if they resolved their differences of opinion.

5. In their groups, have students look at the risks and list possible consequences of the behaviors.

6. Involve students in a discussion to express their ideas about possible consequences. List their comments on the board or overhead.

7. Review for the students the process of their activity: They have determined what behaviors put them at risk and their consequences. Explain to them that they have completed the first steps in responsible decision making.

8. Involve the students in the next steps to responsible decision making which leads to prevention.



Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

**AIDS: THE PREVENTABLE EPIDEMIC**
**GRADES 4-5**

**RISK, NO RISK STUDENT WORKSHEET**

**Directions:** Read the list of behaviors below. Decide if they are a risk or not a risk to your health by marking an X in one of the columns below.

After you have marked your answer, explain why you think it is or is not a risk to your health.

| | RISK | NO RISK |
|---|---|---|
| 1. Skateboarding | | |
| 2. Drinking alcohol. | | |
| 3. Drinking pop. | | |

Explain Your Answer:

Explain Your Answer:

Explain Your Answer:



Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

RISK NO RISK

4. Sitting next to someone with AIDS.

Explain Your Answer:

5. Being a "couch potato."

Explain Your Answer:

6. Using tobacco.

Explain Your Answer:

7. Using someone's comb.

Explain Your Answer:

8. Washing your hands with cold water.

Explain Your Answer:

TEACHER'S KEY

## AIDS: THE PREVENTABLE EPIDEMIC
## GRADES 4-5

## RISK, NO RISK STUDENT WORKSHEET

**Directions:** Read the list of behaviors below. Decide if they are a risk or not a risk to your health by marking an X in one of the columns below.

After you have marked your answer, explain why you think it is or is not a risk to your health.

Answers may vary from student to student. Opinions should be supported by the explanation given.

| | RISK | NO RISK |
|---|---|---|
| 1. Skateboarding. | | |
| Explain Your Answer: | | |
| 2. Drinking alcohol. | | |
| Explain Your Answer: | | |
| 3. Drinking pop. | | |
| Explain Your Answer: | | |
| 4. Sitting next to someone with AIDS. | | |
| Explain Your Answer: | | |
| 5. Being a "couch potato." | | |
| Explain Your Answer: | | |
| 6. Using tobacco. | | |
| Explain Your Answer: | | |
| 7. Using someone's comb. | | |
| Explain Your Answer: | | |
| 8. Washing your hands with cold water. | | |
| Explain Your Answer: | | |
| 9. Visiting a friend that has chickenpox. | | |
| Explain Your Answer: | | |
| Add your own risk or no risk behavior here. | | |
| 10. | | |
| Explain Your Answer: | | |

RISK NO RISK

9. Visiting a friend that has chickenpox.

Explain Your Answer:

Add your own risk or no risk behavior here.

10.

Explain Your Answer:

## FIFTH GRADE

GOAL III: Evaluate the effects of disease on individuals, families, communities, and societies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will: | 1. Expand Goal II activities. | |
| 1. Explain the importance of taking responsibility for oneself and others. | | |
| 2. Explain the importance of self-respect. | | |

## FIFTH GRADE

GOAL IV: Recognize the roles and responsibilities of local, state, and national health professionals, organizations, and agencies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Discuss state resources which provide accurate information about AIDS. | 1. Contact for information:<br>Communicable Disease Project<br>Division of Public Health<br>SD Department of Health<br>523 East Capitol<br>Pierre, SD 57501<br>(605)773-3364 | |

# Sixth Grade

## SIXTH GRADE

GOAL IV: Recognize the roles and responsibilities of local, state, and national health professionals, organizations, and agencies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Understand the role of the Centers for Disease Control in health promotion and disease control. | 1. Using the information provided, the teacher will lead a class discussion on the scope of CDC activities. (Teacher Information pp. 164-166)<br><br>2. Together the class will write one letter requesting information from the CDC.<br><br>NOTE: Address letter to:<br>Centers for Disease Control<br>Public Health Service<br>U.S. Department of Health and Human Services<br>Atlanta, GA 30333 | |

## SIXTH GRADE

GOAL III: Evaluate the effects of disease on individuals, families, communities, and societies.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Discuss the abuse of alcohol and drugs as it affects behavior. | 1. The teacher will insure that this discussion is covered by the drug and alcohol abuse prevention curriculum. | To locate your local prevention resource center contact:<br>Department of Health<br>Division of Alcohol and Drug Abuse<br>523 East Capitol<br>Pierre, SD 57501<br>(605)773-3123 |

# CHANT

*(Clap hands in rhythm with the words.)*

Just say "no"
Just say "no"
Just say "no"
To drugs

Just say "no"
Just say "no"
Just say "no"
To alcohol

Just say "no"
Just say "no"
Just say "no"
To drugs

You say "no"
I say "no"
We say "no
To drugs

You say "No"
I say "No"
We say "No"
To alcohol

*(Repeat as often as needed.)*



Reproduced from AIDS Policies and Instructional Materials with permission of Delaware Department of Public Instruction

# PREPARE YOUR REPLY

---

Situation #1

You are visiting your cousin for the weekend. Your cousin offers you a can of beer.

Reply

---

Situation #2

You and your friends are on the way home from school. You stop at the store. Your friend buys a pack of cigarettes and offers you one.

Reply

---

Situation #3

You are at a friend's house for a pajama party. During the evening some pills are passed around.

Reply

---

Situation #4

You meet a group of your friends at a local park. You see several of your friends smoking. One friend offers you "pot".

Reply



Reproduced from AIDS Policies and Instructional Materials with permission of Delaware Department of Public Instruction

| Situation #5 | Reply |
| --- | --- |
| A party is in progress at a friend's house. You are invited to drink some "spiked" punch. | |

| Situation #6 | Reply |
| --- | --- |
| You and a friend are watching a television program in which all the glamorous stars are smoking. Your friend suggests that you would look older if you took up smoking. | |

| Situation #7 | Reply |
| --- | --- |
| You feel "blah" at school. Your friend hands you a pill and says "this will pick you up". | |

| Situation #8 | Reply |
| --- | --- |
| You are at football game with your brother. A bottle is being passed around. You are asked to take a drink. | |

# HOW TO SAY "NO"

Steps to Take

1. Stop and Think. Is this something you want to do or is someone else pressuring you to do it.
2. Decide on a way (strategy) to say "No".
3. Repeat your strategy if it doesn't work the first time or try another one.

# WAYS TO SAY "NO"

Humor

Example:
"C'mon. Have a smoke."
Reply: "No thanks! I'm not a chimney."

Use Your Credit

This way questions your friendships--do you like me for me or only if I drink, smoke or use drugs?

Examples:
"You mean I have to drink to be your friend?"

"I like you and want to be around you, but not if I have to smoke."

"No, you should not force me to pop a pill."

Delay the Decision

This way avoids the decision to drink or not to drink, to smoke or not smoke, to take a drug or not take drugs.

Examples:
"I don't want to try it right now."
"Do I have to try it now?"
"I don't feel like it right now."

Reproduced from AIDS Policies and Instructional Materials with permission of Delaware Department of Public Instruction

**CATEGORY:** Substance Use and Abuse **GRADE LEVEL:** 4-6

**OBJECTIVE:** Identify and practice strategies to "Say No To Drug/Alcohol Use".

## EXPLANATION FOR THE TEACHER

Many young people find themselves in situations that pressure them to use drugs, alcohol, or smoke. A survey of any class of fourth, fifth, or sixth graders would reveal that most of the students have tasted alcohol, may have tried a cigarette, and are familiar with names of illegal and legal drugs. Factors that influence the initiation into alcohol, drugs, and smoking include parent influence (example), sibling and peer pressures, and media exposure, including advertising. Young people need to identify and practice various strategies to say "No" to those pressures. Humor, being assertive, using your credit, changing the subject, recruiting a friend, and delaying the decision can be used to respond to pressures to use drugs, alcohol, or tobacco.

**GETTING READY:** Ask if anyone has been asked to taste beer, wine, or liquor by a friend. How about trying a cigarette or pot or some pill or other drug?

Discuss peer pressure, parental influence, older sibling pressure, and effects of the media and advertising on drug/alcohol/tobacco use.

## ACTIVITIES

Duplicate Handout #1, "How to Say No!!" Have students divide into groups of 2 or 3 to identify additional responses under each strategy.

Duplicate Handout #2, "Prepare Your Reply". Distribute at least one situation card to each group of two students. Have students prepare a reply. Then have students role play the situation and response. Can the rest of the class identify the strategy used?

**LET' TALK:** Which strategy did the students like the best? Could you use these strategies in other situations to say "No"?

Duplicate some of the responses from the students and have them identify which strategy was used.

Form a "Just Say No Club", if there is interest.

Reproduced from AIDS, Policies and Instructional Materials with permission of Delaware Department of Public Instruction

## AIDS: THE PREVENTABLE EPIDEMIC
## GRADES 6-8

### HIGH RISK, NO RISK STUDENT SURVEY

HIV is spread through behaviors. Read the list below and decide which behaviors can put you at risk for HIV infection. Discuss and justify your answers. Put an "X" on the line to show where you think the behavior fits on the scale of high to low to no risk.

| | Behavior | High Risk 5 4 | Low Risk 3 2 | No Risk 1 0 |
|---|---|---|---|---|
| 1. | Sexual contact with more than one partner. Explain your answer: | <----/----/----/----/----/----> | | |
| 2. | Sharing IV drugs. Explain your answer: | <----/----/----/----/----/----> | | |
| 3. | Hugging, holding hands. Explain your answer: | <----/----/----/----/----/----> | | |
| 4. | Abstinence from sexual contact. Explain your answer: | <----/----/----/----/----/----> | | |
| 5. | Earpiercing. Explain your answer: | <----/----/----/----/----/----> | | |
| 6. | Sitting by a person with AIDS. Explain your answer: | <----/----/----/----/----/----> | | |
| 7. | Donating Blood. Explain your answer: | <----/----/----/----/----/----> | | |
| 8. | Being bitten by a mosquito. Explain your answer: | <----/----/----/----/----/----> | | |
| 9. | Sneezing, coughing and sweating. Explain your answer: | <----/----/----/----/----/----> | | |
| 10. | Sharing razors. Explain your answer: | <----/----/----/----/----/----> | | |
| 11. | Deep or french kissing. Explain your answer: | <----/----/----/----/----/----> | | |

<u>High Risk, No Risk Student Survey cont.....</u>

| | Behavior | High Risk 5 4 | Low Risk 3 2 | No Risk 1 0 |
|---|---|---|---|---|
| 12. | Reusing needles that have been cleaned. Explain your answer: | <----/----/----/----/----/----> | | |
| 13. | Monogamy. Explain your answer: | <----/----/----/----/----/----> | | |
| 14. | Practicing abstinence from sex and drugs. Explain your answer: | <----/----/----/----/----/----> | | |
| 15. | Thinking, "AIDS won't affect me." Explain your answer: | <----/----/----/----/----/----> | | |
| 16. | Sexual contact between two people without a condom. Explain your answer: | <----/----/----/----/----/----> | | |
| 17. | Sexual contact between two people using a condom. Explain your answer: | <----/----/----/----/----/----> | | |
| 18. | Masturbation. Explain your answer: | <----/----/----/----/----/----> | | |

TEACHER'S KEY

# AIDS: THE PREVENTABLE EPIDEMIC
## GRADES 6-8
## HIGH RISK, NO RISK STUDENT SURVEY

HIV is spread through behaviors. Read the list below to decide which behavior can put you at risk for HIV. Discuss and justify your answers. Put an "X" on the line to show where you think the behavior fits on the scale of high to low to no risk.

| Behavior | High Risk 5 | 4 | Low Risk 3 | 2 | 1 | No Risk 0 |
|---|---|---|---|---|---|---|
| 1. Sexual contact with more than one partner. | | X | X | | | |

<----/----/----/----/----/---->

**As a person increases their number of sexual partners, their chances also increase of having sexual contact with someone infected with HIV. Risk can be reduced by lifetime monogamy or by the use of a condom.**

2. Sharing IV drugs.

X X

<----/----/----/----/----/---->

**Sharing intravenous drugs is a high risk behavior in the spread of HIV. If someone is infected and shares their needle and syringe with another person, blood that contains HIV on the needle or the syringe can be directly injected into the other person's bloodstream and infect them.**

3. Hugging, holding hands.

X

<----/----/----/----/----/---->

**AIDS is not spread through casual contact.**

4. Abstinence from sexual contact.

X

<----/----/----/----/----/---->

**This is a 100% effective prevention behavior for the sexual contact spread of HIV.**

5. Earpiercing.

X X

<----/----/----/----/----/---->

**If all needles are properly sterilized, there is no risk for the spread of HIV. However, if the instruments are not sterilized, there is some risk.**

6. Sitting by a person with AIDS.

X

<----/----/----/----/----/---->

**AIDS is not spread by casual contact.**

**TEACHER'S KEY**
**High Risk, No Risk Student Survey**
**cont.....**

| Behavior | High Risk 5 | 4 | Low Risk 3 | 2 | No Risk 1 | 0 |
|---|---|---|---|---|---|---|
| 7. Donating Blood. | | | | | | X |

<----/----/----/----/----/---->

**There is no risk in donating blood. All equipment used is sterilized, used once and then destroyed.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 8. Being bitten by a mosquito. | | | | | | X |

<----/----/----/----/----/---->

**No cases of HIV infection resulting from mosquito bites have been reported. If mosquitoes were a source of transmission for HIV, many more children and other persons without risk factors would be infected.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 9. Sneezing, coughing, and sweating. | | | | | | X |

<----/----/----/----/----/---->

**There have not been any cases of transmission caused by these actions.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 10. Sharing razors. | | | | X | | |

<----/----/----/----/----/---->

**A potential for blood to blood contact is possible.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 11. Deep or french kissing. | | | | | X | |

<----/----/----/----/----/---->

**Considered low to no risk. Since a small amount of virus was found in the saliva of one HIV infected person out of a study group of 71, it is recommended, however, that those who are at high risk for HIV infection refrain from this type of kissing.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 12. Reusing needles that have been cleaned. | | | | X | X | |

<----/----/----/----/----/---->

**Close to no risk if the needles have been properly cleaned by following specific guidelines consistently. However, the risk increases as the sterilization procedures decrease in efficiency.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 13. Monogamy. | | | | | X | X |

<----/----/----/----/----/---->

**No risk if it is a mutually monogamous relationship for life as long as neither partner is infected from needle use.**

**TEACHER'S KEY**
**High Risk, No Risk Student Survey**
**cont.....**

| Behavior | | High Risk 5 4 | Low Risk 3 2 | No Risk 1 0 |
|---|---|---|---|---|
| 14. | Practicing abstinence for sex and drugs. | | | X |
| | | <----/----/----/----/----/----> | | |

**100% effective in the prevention of HIV**

| | | | | |
|---|---|---|---|---|
| 15. | Thinking, "AIDS won't affect me." | X | | |
| | | <----/----/----/----/----/----> | | |

**Denial can lead to making choices that are high risk in the spread of HIV.**

| | | | | |
|---|---|---|---|---|
| 16. | Sexual contact between two people without a condom. | X X | | |
| | | <----/----/----/----/----/----> | | |

**Unprotected sex with a partner can put one at risk for HIV especially if it is a casual encounter or if personal and/or sexual histories are unknown.**

| | | | | |
|---|---|---|---|---|
| 17. | Sexual contact between two people using a condom. | | | X X |
| | | <----/----/----/----/----/----> | | |

**The condom is designed to prevent the exchange of body fluids that can contain HIV such as vaginal/cervical secretions and semen. However, condoms can fail if used improperly. They need to be used correctly and for every contact.**

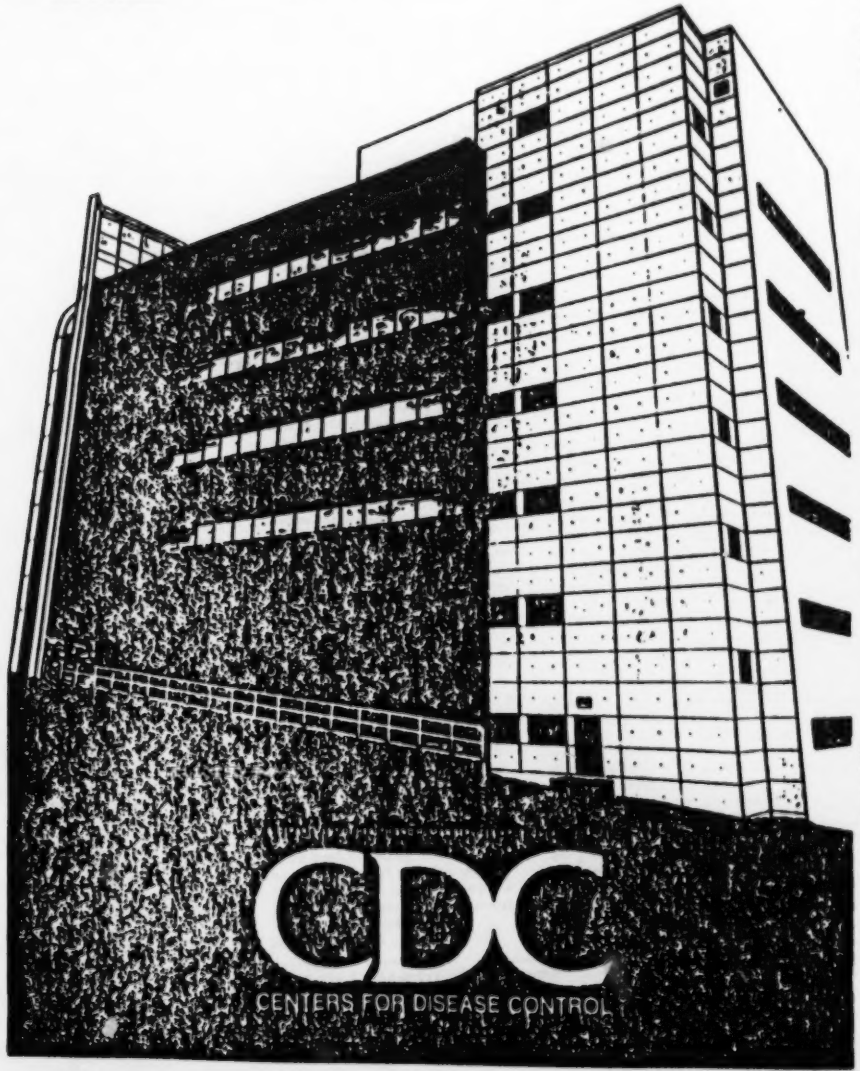
| | | | | |
|---|---|---|---|---|
| 18. | Masturbation | | | X |
| | | <----/----/----/----/----/----> | | |

**Masturbation is a safe outlet for releasing sexual tension and is not a risk behavior for the transmission of HIV.**

# TEACHER INFORMATION

Dateline:CDC

SPECIAL ISSUE




## Providing the Knowledge and Tools for Prevention

Effective public health programs are often a matter of having the right tools to do the job and trained professionals who know how to use them. The *Training and Laboratory Program Office* plays an important part in both.

The Office trains the nation's force of public health workers in the latest disease prevention techniques. This force includes federal, state and local public health workers, as well as others from academia, professional and voluntary organizations.

The Office develops educational materials that use a variety of electronic and print media in support of disease prevention and health promotion programs.

It also supports the nation's clinical laboratories, training laboratory workers in the use of the latest diagnostic techniques and providing programs to assure that the results of laboratory testing are reliable.

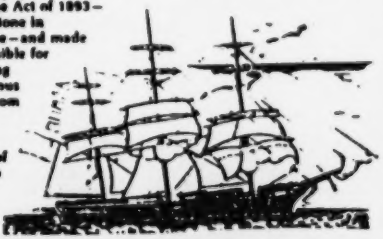
## The Public Health Service: A Heritage of Disease Prevention

The Public Health Service has its origins in the Marine Hospital Service established in 1798 by President John Adams. The nation's concern for the health of its mariners grew into concern that the American fleet would bring home disease.

As waves of immigrants began arriving from Europe's crowded cities, cholera, smallpox, and particularly, yellow fever spread throughout the United States killing millions. Continuing epidemics led to the passage of the Act of 1893—an important milestone in preventive medicine—and made the Service responsible for protecting the young nation from infectious diseases brought from overseas.

Because city and state departments of health wanted help with these new national health problems, Congress acted. To make the Service more professional, it created the Commissioned Corps and made it responsible for preventing the transmission of infectious diseases between states.

To more accurately reflect its responsibilities, the Marine Hospital Service was renamed the Public Health Service in 1912. During the two World Wars, it became part of the military forces in that the Commissioned Corps



could be detailed more easily to emergency areas, to other agencies, or to the United Nations Relief and Rehabilitation Administration.

When the wartime malaria control program became the Public Health Service's Communicable Disease Center in 1946, it was assigned responsibility for traditional PHS programs: controlling infectious diseases; immunizing children against smallpox, diphtheria and other killers; controlling sexually transmitted diseases, preventing the spread of tuberculosis, and operating the quarantine program.

Today the PHS is the health component of the Department of Health and Human Services and is headed by the Assistant Secretary for Health and the Surgeon General, who commands the Commissioned Corps.

CDC is the PHS agency responsible for promoting health and preventing disease.

## Surveillance and Epidemiology: the Keys to Disease Prevention

The Centers for Disease Control investigates dozens of outbreaks of illness throughout the United States each year. And often *Epidemiology Program Office* experts are called upon to investigate outbreaks elsewhere in the world.

CDC's disease detectives use the techniques of epidemiology to find the cause of an illness. The culprit could be bacteria, virus, toxic chemical, or rickettsia. It could be an ancient enemy or something never seen before.

CDC's approach to identifying disease through careful surveillance was formalized with the founding of the *Epidemic Intelligence Service* in 1951. The *EIS* recruits physicians, veterinarians, nurses, statisticians and others in the social sciences and related fields. They receive an intensive course in epidemiology and then serve two year assignments at CDC or in a state or local health department. There they will develop surveillance systems, investigate a disease outbreak, set up a cancer prevention program, or work in health education.

A part of most *EIS* officers' careers is being published in a refereed medical or science journal and the *Morbidity and Mortality Weekly Report*, CDC's often quoted weekly publication. The result of an 1878 Act of Congress requiring that states inform the Federal government of infectious diseases, *MMWR* is often the best way to communicate timely information to the nation's public health professionals.



BEST COPY AVAILABLE

## Providing Global Assistance in Preventing Disease

Because disease bearing organisms do not respect international boundaries, preventing disease is not just a problem for the United States. It is a global problem.

The Centers for Disease Control's initial focus was on inspecting and quarantining incoming ships to prevent the introduction of disease.

In the late 1960s, CDC, working with the World Health Organization, led an international campaign that eradicated smallpox, an ancient enemy that had killed more people than all wars.

While CDC still answers international calls for help following disasters, today its most important role is training health professionals of developing countries in the latest methods of disease prevention.

The *International Health Program Office* works with the Departments of Health in other nations and international organizations such as the World Health Organization and the Pan American Health Organization to train indigenous health workers and support programs to improve nutrition, sanitation, and immunization programs against childhood diseases. These programs are designed to improve the quality of life for millions of people throughout the world.

## Facts: the Starting Point for Prevention Policy

Modern public health practice is increasingly dependent upon statistical interpretation. Since the computer age began, having the necessary data makes it possible to see significant trends in public health that might otherwise be unnoticed. This statistical base is essential for evaluating and planning health policy and research priorities.

The *National Center for Health Statistics* collects and analyzes the full spectrum of the nation's vital and health statistics, conducts research into statistical and survey methodology, and provides technical assistance to health professionals in the United States and other nations.

These widely used data cover: the nature of illness and disability in the United States and its economic impact; environmental, social and other health hazards; health resources including: the availability of hospital, nursing home, and ambulatory care; the nutritional status of the population; family formation, growth, and dissolution; and vital statistics – births, deaths, marriages, and divorces.

Center data are available to health professionals and the public in published reports and in digital form.

## Preventing Infectious Disease

From its beginning, the Centers for Disease Control has combined research and prevention strategies to control infectious diseases caused by bacteria, rickettsia, viruses and other organisms.

We are now moving against newly discovered infectious diseases such as AIDS, Toxic Shock Syndrome, Legionnaires' Disease – and old diseases which are resistant to drugs.

Using biotechnology, field investigation and surveillance, the *Center for Infectious Diseases* investigates outbreaks of infectious disease within the United States and internationally. It then develops programs to prevent their spread.

Effective prevention can include control programs (drying up mosquito breeding areas), public education (warning people of the dangers of Reye Syndrome and Toxic Shock Syndrome), and vaccination ( flu shots for the elderly).

The Center fights common diseases – hepatitis, influenza, and gastroenteritis – which strike millions of Americans each year and uncommon ones such as listeriosis and AIDS.

## Providing Prevention Services

Helping local and state health departments run effective programs to prevent disease is the Centers for Disease Control's traditional role.

The *Center for Prevention Services* provides financial and technical assistance to control and prevent AIDS, diabetes, sexually-transmitted diseases, and tuberculosis. Its immunization programs protect against childhood diseases including measles, mumps, polio, rubella, diphtheria, and pertussis and adult diseases including hepatitis, influenza, and tetanus.

Prevention programs also encourage dental health through increased participation in fluoridation of drinking water and prevention of periodontal disease.

The Center also trains officers of the U.S. Immigration and Naturalization Service and the U.S. Customs Service to screen arriving foreign visitors for some diseases.



## Smoking: The Number One Preventable Cause of Death

Cigarette smoking is the nation's single most preventable cause of death. It causes cancers of the lung, mouth, larynx, esophagus, pancreas, kidneys, and bladder; chronic obstructive lung disease; heart disease and stroke. It kills about 1,000 Americans every day, equivalent to the number of lives lost if three jumbo jets crashed each day with no survivors.

The *Office on Smoking and Health* conducts behavioral and epidemiologic research, develops health promotion and education programs that encourage people to quit smoking, provides technical assistance and training to state and local health departments, and helps prepare the Surgeon General's annual report on the health consequences of smoking.

## Promoting a Healthier Environment: Preventing Injuries, Disabilities

The Centers for Disease Control helps assure that the environment is a healthy place in which to live and work.

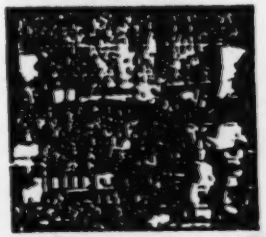
The *Center for Environmental Health and Injury Control* assists local public health officials at the scene of natural or manmade disasters – when a volcano erupts or a forest fire rages, hazardous chemicals leak or a nuclear accident occurs. It also reviews Environmental Impact Statements to assure that major Federally supported development projects are reasonably safe; it conducts research to prevent harm from toxic chemicals and natural and manmade radiation, and it protects the health of visitors to national parks.

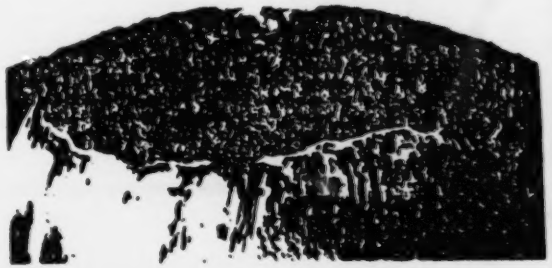
The Center's laboratory and epidemiologic studies have provided valuable scientific knowledge of: the effects of chemicals such as Agent Orange, dioxins, furans, lead, PCBs and PBBs, and various pesticides; emergencies such as the chemical plant that exploded at Bhopal, India, the eruption of Mount Saint Helens, the reactor accident at Three Mile Island, and the health threat from naturally occurring radon.

The Center also supports research in schools of public health and state and local health departments aimed at understanding how to prevent such common injuries as automobile casualties, drownings, fires, household injuries, homicides and suicides – the leading cause of death in people under 44 years of age. Projects are examining ways of reducing injuries and disabilities among high risk groups – especially children, the elderly, minorities, and rural Americans.

Three Mile Island cooling towers at Harrisburg Pennsylvania, site of a major mishap in 1979 when radioactive steam leaked into the containment vessel. (by William Bonifant © 1980 National Geographic Society)

Mount Saint Helens in Washington State was the site of a major volcanic eruption in 1980. (by Steve Raymer © 1980 National Geographic Society)







BEST COPY AVAILABLE

## Promoting Healthier Lifestyles

Encouraging people to change their lifestyles by reducing risk factors such as lack of exercise, obesity, and smoking, is critical to promoting healthier lives.

The *Center for Health Promotion and Education* develops effective health promotion programs to promote reproductive and infant health, prevent cardiovascular diseases and hypertension; teach school children about the dangers of alcohol, cigarettes, drugs, stress, and AIDS; and support local programs that encourage exercise, proper nutrition, and the use of seatbelts.

The Center's health promotion programs are developed in conjunction with state and local health departments and education agencies, other federal agencies (such as the National Institutes of Health), private organizations (such as the American Cancer Society, the American Lung Association, and the Red Cross), professional societies in education and health, and international organizations.

## A Public Health Priority: Preventing Chronic Diseases

Preventing disease *before* people become ill is the Centers for Disease Control's goal.

CDC historically has played an important role in preventing the spread of the infectious diseases that plagued our nation and the world – influenza, smallpox, and yellow fever.

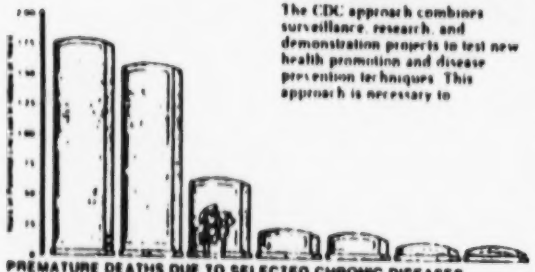
Today 70 percent of all deaths in the United States are due to cancer, cardiovascular disease, chronic obstructive lung disease, diabetes, kidney and liver disease – some of these traceable to infectious causes.

To meet the challenge of chronic disease, CDC's research and prevention programs are aimed at changing lifestyle and other factors that are major contributors to illness and death – the harmful use of alcohol and tobacco, lack of exercise, poor nutrition.

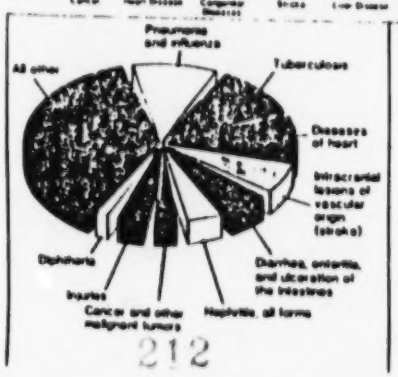
The CDC approach combines surveillance, research, and demonstration projects to test new health promotion and disease prevention techniques. This approach is necessary to understand and control each of the factors contributing to illness – quality of health care, environment, heredity, and lifestyle.

State and local health departments benefit from this research and receive assistance to operate prevention programs. These programs include diabetes screening, controlling hypertension and weight, increasing exercise, lowering cholesterol, and smoking cessation.

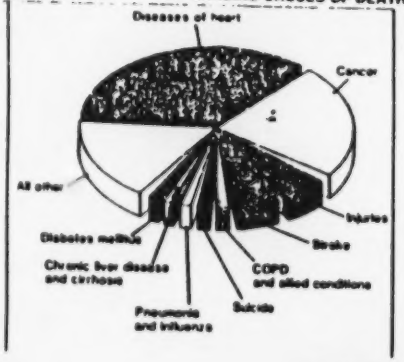
Although CDC's primary means for improving public health continues to be working with state and local health departments, today's programs involve direct contact with representatives of business and labor, health care providers, school systems, voluntary organizations, and professional societies to develop programs that measurably reduce illness and death and allow people to live healthier, longer lives.



PREMATURE DEATHS DUE TO SELECTED CHRONIC DISEASES




TEN LEADING CAUSES OF DEATH






Dateline:CDC

SPECIAL ISSUE
April, 1988

CDC has undergone major changes in the last ten years. In many ways, the institution has gained in character and broadened in scope. This special edition of Dateline CDC is intended to describe these changes.

Dateline CDC is a monthly publication for employees of the Centers for Disease Control, Atlanta, Georgia 30333.

COVER
Artist's rendering of the virology building to be dedicated in May, 1988.

## Centers for Disease Control:

# Promoting Health Since 1946

What is the Centers for Disease Control? To many people it is a headline about AIDS, news stories about Legionnaires' Disease, or a photograph of public health workers inoculating African children against smallpox.

CDC is all of these things but much more, too.

It is scientists in laboratories developing a new diagnostic test and it is epidemiologists helping state health departments determine the cause of an outbreak of disease. It is health educators working on programs to promote healthier lifestyles and occupational health scientists evaluating standards to protect workers from on-the-job hazards.

CDC can be on the scene of a major health emergency – a volcanic eruption, forest fire, food poisoning, or nuclear accident – within hours. It also teaches public health workers to serve local communities in future generations.

CDC grew out of the World War II Office of Malaria Control in War Areas in Atlanta. The program was started to protect American servicemen from the mosquito borne diseases then indigenous to the southern states where their training camps were located. As the war ended, the Program was expanded to prevent tropical diseases such as dengue and yellow fever from entering the United States and taking root.

The late Assistant Surgeon General Dr. Joseph W. Mountin saw in the Office of Malaria Control the seed of a "Center of Excellence" for the prevention of communicable disease. Thus CDC began life in 1946 as the U.S. Public Health Service's Communicable Disease Center.

## Who We Are,

# Who We Need

The Centers for Disease Control is the agency of the U.S. Public Health Service responsible for preventing disease and promoting health.

Working with state and local health departments, other federal agencies; voluntary, professional, and international organizations, CDC both responds to the need for help during emergencies and develops programs to understand the causes of disease and injury and prevent their occurrence.

About half the employees work at CDC's Atlanta, Ga. headquarters near Emory University. The remainder work at locations in Anchorage, Alaska; Fort Collins, Colo.; San Juan, Puerto Rico; at the National Center for Health Statistics headquarters in Hyattsville, Md. and Research Triangle Park, N.C.; or at the National Institute for Occupational Safety and Health laboratories in Cincinnati, Ohio and Morgantown, W. Va.; in the metropolitan Washington, D.C. area, or at health departments throughout the United States and the world.

With a 1988 budget of $771.8 million, CDC employs about 4,500 professionals in 170 different fields including administrators, behavioral scientists, computer specialists, chemists, environmental engineers, epidemiologists, laboratory technicians, microbiologists, pharmacologists, program and management analysts, research medical officers, statisticians, technical writers and editors, and toxicologists.



BEST COPY AVAILABLE

## SIXTH GRADE

GOAL I: Recognize the causes and characteristics of communicable and noncommunicable diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Understand the modes of transmission of HIV (Human Immunodeficiency Virus) and other STDs (Sexually Transmitted Disease). | 1. Using information provided, student worksheets, and transparency masters, teachers will design an appropriate unit. (Teacher Information pp. 136-149) | |

# TEACHER INFORMATION

**AIDS: THE PREVENTABLE EPIDEMIC**
**GRADES 6-8**

## ORIGINS OF THE AIDS EPIDEMIC

No one knows for certain where or how the AIDS epidemic began. It is known that some people in Africa were infected at least as early as the 1960's. (This is known because blood specimens collected then, stored frozen, and tested recently, have shown evidence of the infection.) It is possible that the virus infected humans in Africa for many years before this first known proof of infection.

Some scientists believe HIV may have entered the human population from monkeys that contain a similar virus. This could have happened if an infected monkey bit a person or if a person was somehow accidentally exposed to an infected monkey's blood such as by skinning a monkey in preparation for cooking.

AIDS was first recognized in the U.S. in 1981. It is now realized, however, from testing of stored blood specimens, that some people in the U.S. were infected as early as the mid-1970's.

The number of AIDS cases in the U.S. has increased rapidly since 1981. It is important to remember that the disease has a long incubation period, or time between first being infected with the virus and developing clinical symptoms of disease. Many of the persons developing AIDS today were infected more than five years ago. Persons infected since then may still be asymptomatic.

## THE IMMUNE SYSTEM

The immune system functions to protect the body from infection. It acts both to prevent infection and to reduce the severity of disease when infections occur. Barriers such as skin and mucous membranes that prevent germs from entering the body are an important part of the immune system. Another major component of the immune system is the white blood cell. White blood cells, which are made in the bone marrow, are microscopic and circulate throughout the body in the blood stream. There are many types of white blood cells. Different types have different functions such as engulfing bacteria or producing poisons to kill parasites.

One type of white blood cell (called a B-lymphocyte) makes antibodies, which are specific molecules that attach to and help kill infecting micro-organisms (pathogens) like viruses and bacteria. In general, it is this production of antibodies that results in immunity and the ability to prevent repeated re-infection by the same pathogen.

Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

Another type of white blood cell is the T-lymphocyte. A major function of T-lymphocytes is to control the activity of other white blood cells, and specifically to help activate cells such as B-lymphocytes when an infection is present and to deactivate them when the infection has been controlled.

## THE EFFECT OF HIV ON THE IMMUNE SYSTEM

After HIV enters the body, the virus recognizes and infects one of the types of white blood cells that comprise the immune system. The specific cell that HIV infects is called the T4 helper lymphocyte; T4 helper lymphocytes are the cells that help activate the immune system when the body becomes infected. After infecting a T4 lymphocyte, HIV may remain dormant for a variable period of time. For reasons that are not yet known, the virus may then reactivate, begin reproducing, and kill the T4 cell. If sufficient numbers of T4 cells are killed, the infected person's ability to activate the immune system may diminish or be lost and he or she may become increasingly unable to fight off infections. Eventually, the immune system becomes so impaired that even relatively harmless micro-organisms that exist normally in the human body are able to cause life-threatening illnesses.

## HOW HIV IS SPREAD

Since HIV is usually found in blood, semen, and vaginal/cervical secretions of infected persons, it follows that contact with one of these fluids can result in the acquisition of HIV infection. The most common way that the HIV is transmitted is by sexual intercourse. HIV can be transmitted sexually from man to man, man to woman, and woman to man. The second most common way that HIV is transmitted is by the sharing of IV drug needles that have become contaminated with blood of a user who is infected. A third way that HIV can be transmitted is through the blood of an infected mother to her fetus or newborn. In the past, people who received blood transfusions or blood products occasionally developed AIDS because the person who donated the blood was infected with HIV. Since 1985, all blood donated in this country has been screened for HIV infection. Blood that is found to be infected is discarded and is not transfused.

## HOW HIV IS NOT SPREAD

HIV is transmitted from one person to another only by sexual or blood contact. HIV has not been transmitted by other types of contact that are more casual in nature. A number of studies have evaluated whether persons who have lived for extended periods of time in the same house as someone with AIDS are at risk for contracting the disease. These persons have shared meals, bathrooms, and have hugged and kissed AIDS patients. In spite of this direct contact (often for many years), these household



BEST COPY AVAILABLE

contacts have not become infected with HIV. If HIV is not spread within households, then it is not spread in other settings in which there is less direct contact, such as schools or businesses.

There is no evidence that mosquitoes or other biting insects can transmit HIV infection. Although small amounts of the virus have been found in tears and saliva, infection following exposure to tears or saliva has not been reported. HIV is easily destroyed by heat, disinfectants, and drying. Sitting by a person with AIDS, holding hands, or using a telephone or public restroom does not put you at risk for AIDS.

## HIV/AIDS MYTHS AND FACTS

Myths are statements commonly believed to be true, but that are really false.

Some myths about HIV and AIDS:

1. HIV is spread by casual contact (coughs, shaking hands, sharing objects such as a magazine).
2. HIV is spread by mosquitoes or other biting insects.
3. The cause of AIDS is unknown.
4. All persons with HIV, ARC and AIDS are adults.
5. If you learn that someone is infected with HIV, has ARC or AIDS you should stay as far away from them as possible.

The facts:

1. HIV is only spread by close sexual contact or by exposure to blood. An infected person's blood or other body fluids must contact an uninfected person's bloodstream for transmission to occur.
2. Mosquitoes are not involved in the spread of HIV, nor are any other biting insects.
3. The cause of AIDS is a virus, human immunodeficiency virus. This virus reproduces within the infected person's immune system.
4. Although most persons with HIV, ARC and AIDS are adults, the disease also may occur in children if the child is born to an infected mother or receives contaminated blood or blood products. It may also occur in teens who are exposed by sexual contact or needlesharing.
5. Since HIV is not spread casually, don't be afraid to be close to an AIDS patient. You can hug them and be their close friend without risk of catching the disease.



## SYMPTOMS OF AIDS AND ARC

The symptoms of AIDS and ARC develop as HIV progressively kills white blood cells and the immune system becomes unable to fight off infections and other illnesses. The difference between AIDS and ARC is primarily one of severity of immune system dysfunction. A person is given a diagnosis of ARC when they develop illnesses that indicate that their immune system is not functioning properly. Persons with ARC may be quite sick and may die without ever developing AIDS. A patient is given a diagnosis of AIDS when their immune system has become so affected that they develop one of several specific conditions that indicate critical immune system impairment. Most commonly, these specific conditions are infections caused by bacteria or other micro-organisms that normally live in the body but are unable to cause illness when the immune system is working normally. These organisms take advantage of a special circumstance or opportunity to cause disease, and thus the infections they cause are often called "opportunistic" infections. In persons with AIDS, these infections are usually life-threatening.

Symptoms of AIDS may be quite variable and will depend on which opportunistic infection a patient develops. For example, if pneumonia were to occur, symptoms would include persistent or unusual cough and shortness of breath. A gastrointestinal infection might cause chronic, unexplained diarrhea. Other symptoms that can be associated with AIDS include persistent unexplained fever or lymph nods swelling.

An important point to emphasize is that these symptoms may also be caused by many other, less serious illnesses. No one who has these symptoms should assume that they have ARC or AIDS without seeing a doctor to be checked for these other, less serious, and usually curable causes.

## SPECTRUM OF DISEASE CAUSED BY HIV "Iceberg Phenomenon"

The concept of an iceberg can be used to help explain the types of illness caused by HIV. It is best to discuss the AIDS cases first as the "tip of the iceberg." AIDS cases represent a small minority of the infected population. Next is ARC, which is perhaps 5-10 times as common as AIDS. Finally, there is the large percentage of persons, "under the water," who are HIV positive, and asymptomatic carriers. As the epidemic progresses, carriers and persons with ARC may progress to AIDS and recently infected persons will take their place.

## IMPLICATIONS OF THOSE WHO ARE ASYMPTOMATIC

An individual cannot tell whether it is safe to have sex with or to share needles with another person by looking for signs of illness or by asking the other person if he or she is healthy. Most infected persons have no symptoms or outward signs of illness, and most do not know, themselves, that they are infected.

## AIDS: THE PREVENTABLE EPIDEMIC
## GRADES 6-8

**OBJECTIVES:**

The learner will demonstrate the ability to

- Comprehend how human immunodeficiency virus is transmitted.
- Analyze the effect of HIV on the immune system.
- Describe characteristics of AIDS-related complex (ARC) and AIDS.

**MATERIALS:**

Student Fact Sheet, Page
Chain of Infection Student Worksheet, Page
Transparencies on HIV, Epidemiology, Iceberg and Transmission, Pages

**VOCABULARY:**

Immune system, HIV, ARC, AIDS, antibody, lymphocyte, T4 helper lymphocyte cells, asymptomatic, sexual contact, fetus

**PROCEDURES:**

1. As a small group activity, ask students to exchange their chain of infection assignments, review them for accuracy and discuss them. After this activity, review as a whole class.

2. Explain to the students that the purpose of today's lesson is to learn more about the chain of infection with the disease AIDS. They will review the function of the immune system and discover the spectrum of disease caused by HIV invading that system.

3. Involve the students in a discussion on the origins of the AIDS epidemic. Use the transparency that shows the growth of cases to demonstrate why AIDS is considered an epidemic.

4. Introduce the words AIDS, HIV, immune system, virus, T4 helper lymphocyte cells, lymphocyte, and antibody. Use these concepts as a foundation to discuss the immune system, and how HIV is the virus in a chain of infection that effects the immune system.

5. Monitor student understanding by randomly calling on students to explain the agent, reservoir and host for AIDS.

6. Use the transparencies on HIV transmission to discuss method of spread for HIV. Review how other diseases such as hepatitis B and STD's are spread in a similar manner. Further discuss how HIV is not spread. If time permits students may want to discuss myths associated with the spread of HIV and other communicable diseases.

7. As a review of concepts learned, ask students to work with a partner and develop the AIDS chain of infection. The worksheet from Lesson 1 can be used or students can create their own.

- Suggested Breaking Point

8. Go over previous information by sharing chain of infection charts.

9. Pass out the Student Fact Sheet. Allow time for students to read. Use the fact sheet as a foundation for the rest of the lesson.

10. Explain to students that as a result of HIV infection, there are three stages of disease progression. Use the iceberg transparency to discuss the spectrum of disease caused by HIV. Involve students with a discussion on the largest infected population being asymptomatic. Students may want to address issues such as how the iceberg will change after the healthy carriers progress to ARC and AIDS and if this will have a greater impact on availability of services.

11. Describe the HIV antibody test and its availability through county health departments and other health clinics. Other resources for AIDS treatment can be presented using the curriculum resource section.

12. Assign students the task of designing a brochure or other visual on a topic of his or her choice. Topics could include:

    AIDS-What it is and why it is a serious disease.
    AIDS-A Communicable Disease.
    AIDS-Myths and Facts.
    AIDS and ARC-Symptoms and Danger.

13. Show students visual examples from health departments and other agencies. Allow time for brainstorming of ideas with the class on content, style and materials needed to complete their projects.

**EVALUATION:**

Criteria for evaluating visuals can include accuracy and clarity of information, creativity and organization.

Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division



BEST COPY AVAILABLE

## TEACHER INFORMATION - Lesson 2

### THE HIV ANTIBODY TEST

When HIV infects a person, antibodies to fight the infection are produced by B-lymphocytes. Unfortunately, unlike most other antibodies, the antibodies against HIV are usually not effective in helping the body destroy this virus. This is at least partly because the virus can escape from antibodies by hiding inside the T4 lymphocyte.

Antibodies against HIV will persist indefinitely in the blood of persons who have been infected and can be detected by several different types of blood tests. These tests are called HIV antibody tests. A positive test means that antibodies against HIV are present and indicates that the person has been infected at some time in the past with HIV. The HIV test is not perfect and occasionally uninfected people test positive and infected people test negative. HIV antibody tests do not indicate whether a person has AIDS or ARC or will develop these conditions in the future.

## AIDS: THE PREVENTABLE EPIDEMIC
## GRADES 6-8

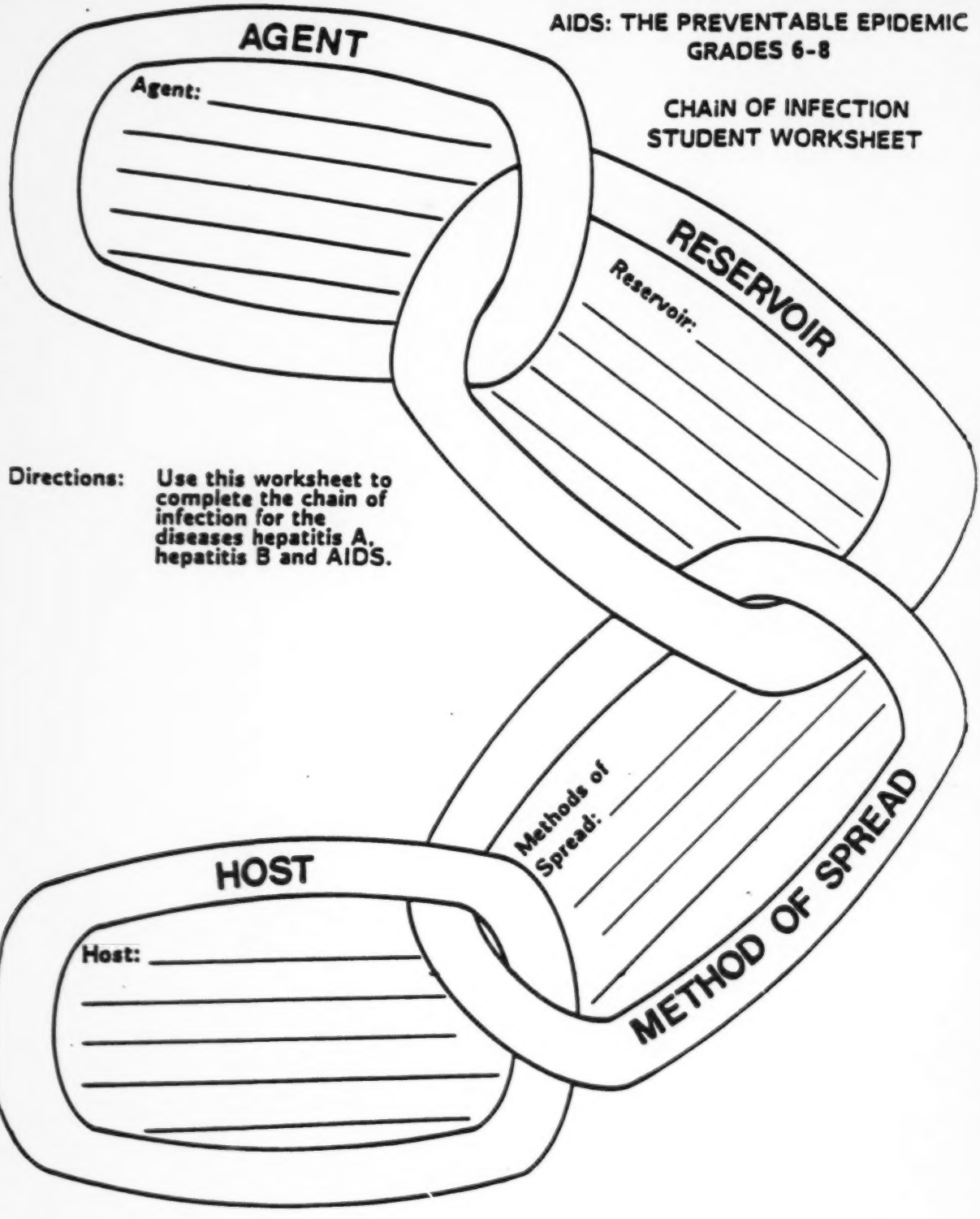
### STUDENT FACT SHEET

| | |
|---|---|
| **DISEASE:** | Acquired Immunodeficiency Syndrome |
| **CAUSE:** | Human Immunodeficiency Virus (HIV) |
| **SYMPTOMS:** | Mild flu-like symptoms may occur during the first few weeks after a person is infected with HIV. Following these symptoms, persons who are infected may remain well for indefinite periods of time.<br><br>ARC (AIDS-related complex or conditions) occurs months to years after becoming infected with HIV. Symptoms of ARC may include chronic, unexplained recurrent infections associated with weight loss, fever, swollen glands, and diarrhea.<br><br>AIDS (acquired immunodeficiency syndrome) occurs many years after becoming infected with HIV, (sometimes 5 years or longer). AIDS is diagnosed when an HIV infected person develops specific opportunistic infections including, pneumonia, fungal infections, herpes; specific cancers, wasting syndrome (tremendous weight loss) and HIV dementia. |
| **HOW AQUIRED:** | HIV is spread through direct contact with an infected person's blood, semen, or vaginal/cervical secretions. This can occur by sexual contact, sharing needles while shooting drugs, from an infected mother to fetus or newborn, and in the past, by blood transfusions. |
| **DIAGNOSIS:** | A physical examination and laboratory tests showing an impaired immune system, unusual infections and unusual cancers are required for an AIDS diagnosis. Blood tests for HIV antibodies also assist in the evaluation. |
| **TREATMENT:** | There is no cure for HIV infection, ARC or AIDS. Infections and cancers that affect AIDS patients may be treatable. |
| **COMPLICATIONS:** | Usually fatal. The life expectancy of a person with AIDS has been approximately 18 months after diagnosis. This may be lengthened by a drug called AZT that has recently become available. |
| **PREVENTION:** | There is no vaccine against AIDS. Everyone must take personal responsibility to see to it that they do not become infected. This includes avoiding behaviors that put you at high risk such as having sex with multiple partners and sharing needles. |

Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

AIDS: THE PREVENTABLE EPIDEMIC
GRADES 6-8

CHAIN OF INFECTION
STUDENT WORKSHEET

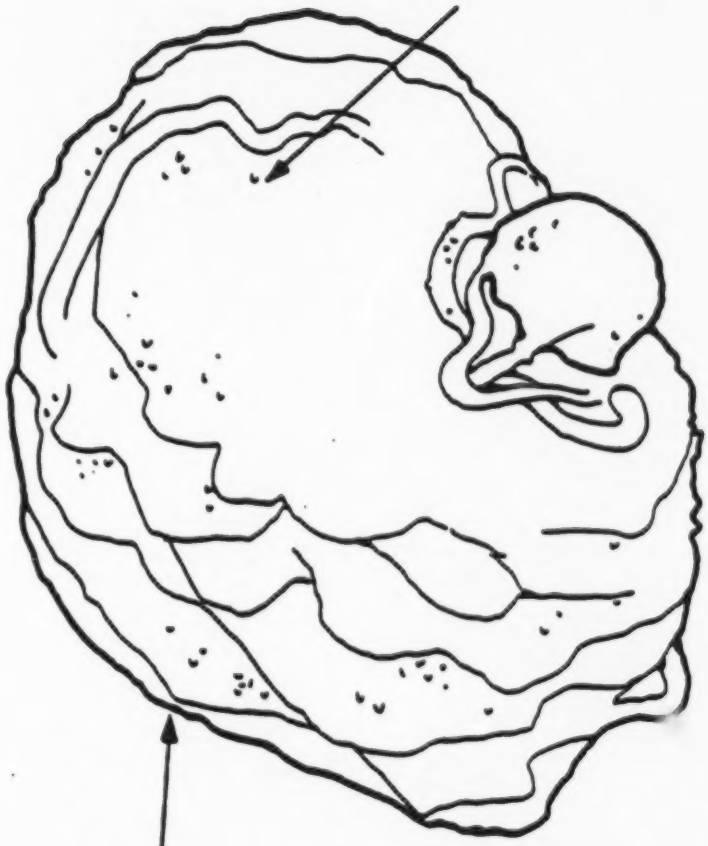



**Directions:** Use this worksheet to complete the chain of infection for the diseases hepatitis A, hepatitis B and AIDS.



Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

## AIDS VIRUS



## HELPER-T CELL



Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

## AIDS: THE PREVENTABLE EPIDEMIC
## GRADES 6-8

### STUDENT FACT SHEET

**DISEASE:** Acquired Immunodeficiency Syndrome

**CAUSE:** Human Immunodeficiency Virus (HIV)

**SYMPTOMS:** Mild flu-like symptoms may occur during the first few weeks after a person is infected with HIV. Following these symptoms, persons who are infected may remain well for indefinite periods of time.

ARC (AIDS-related complex or conditions) occurs months to years after becoming infected with HIV. Symptoms of ARC may include chronic, unexplained recurrent infections associated with weight loss, fever, swollen glands, and diarrhea.

AIDS (acquired immunodeficiency syndrome) occurs many years after becoming infected with HIV, (sometimes 5 years or longer). AIDS is diagnosed when an HIV infected person develops specific opportunistic infections including, pneumonia, fungal infections, herpes; specific cancers, wasting syndrome (tremendous weight loss) and HIV dementia.

**HOW AQUIRED:** HIV is spread through direct contact with an infected person's blood, semen, or vaginal/cervical secretions. This can occur by sexual contact, sharing needles while shooting drugs, from an infected mother to fetus or newborn, and in the past, by blood transfusions.

**DIAGNOSIS:** A physical examination and laboratory tests showing an impaired immune system, unusual infections and unusual cancers are required for an AIDS diagnosis. Blood tests for HIV antibodies also assist in the evaluation.

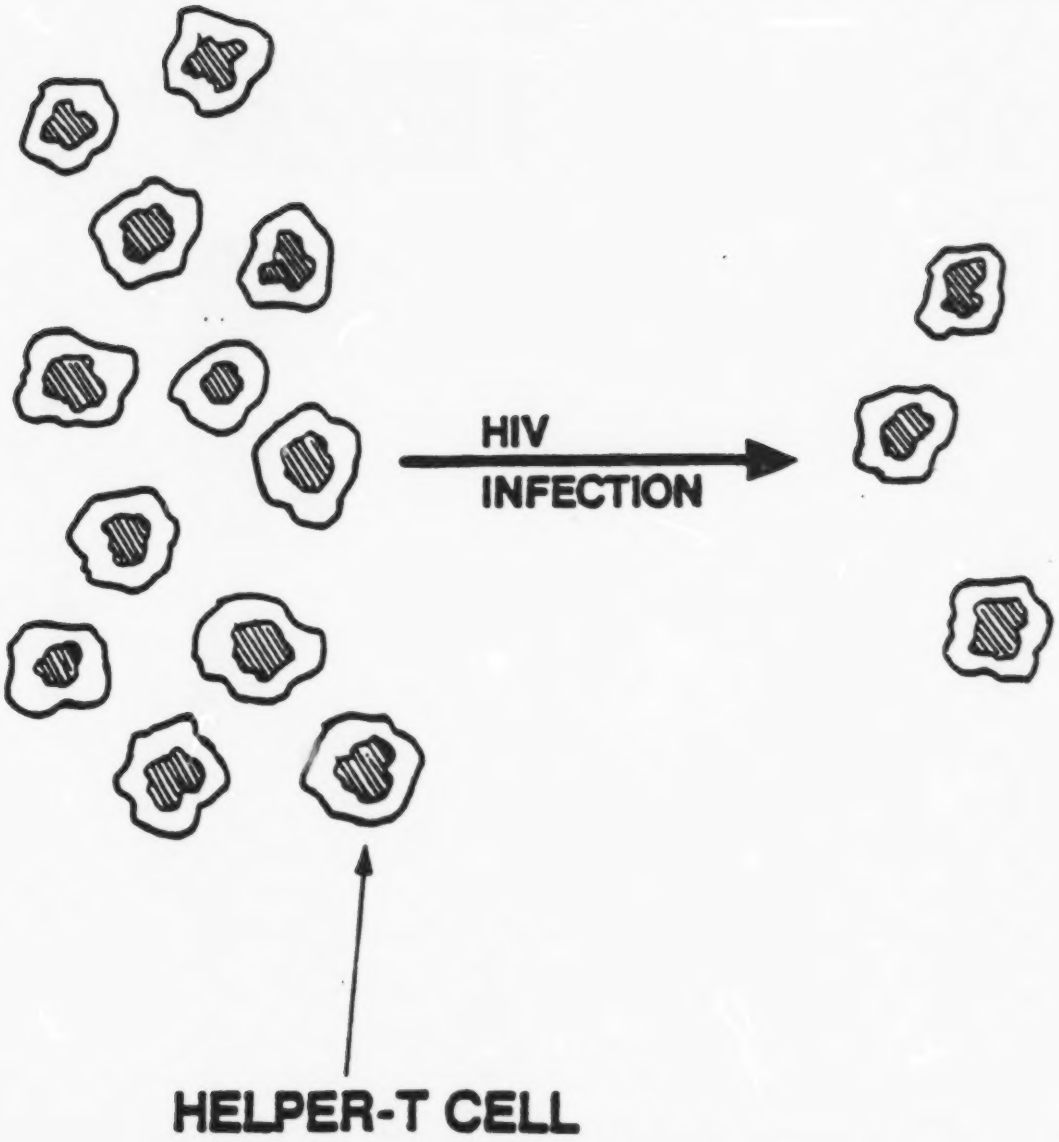
**TREATMENT:** There is no cure for HIV infection, ARC or AIDS. Infections and cancers that affect AIDS patients may be treatable.

**COMPLICATIONS:** Usually fatal. The life expectancy of a person with AIDS has been approximately 18 months after diagnosis. This may be lengthened by a drug called AZT that has recently become available.

**PREVENTION:** There is no vaccine against AIDS. Everyone must take personal responsibility to see to it that they do not become infected. This includes avoiding behaviors that put you at high risk such as having sex with multiple partners and sharing needles.

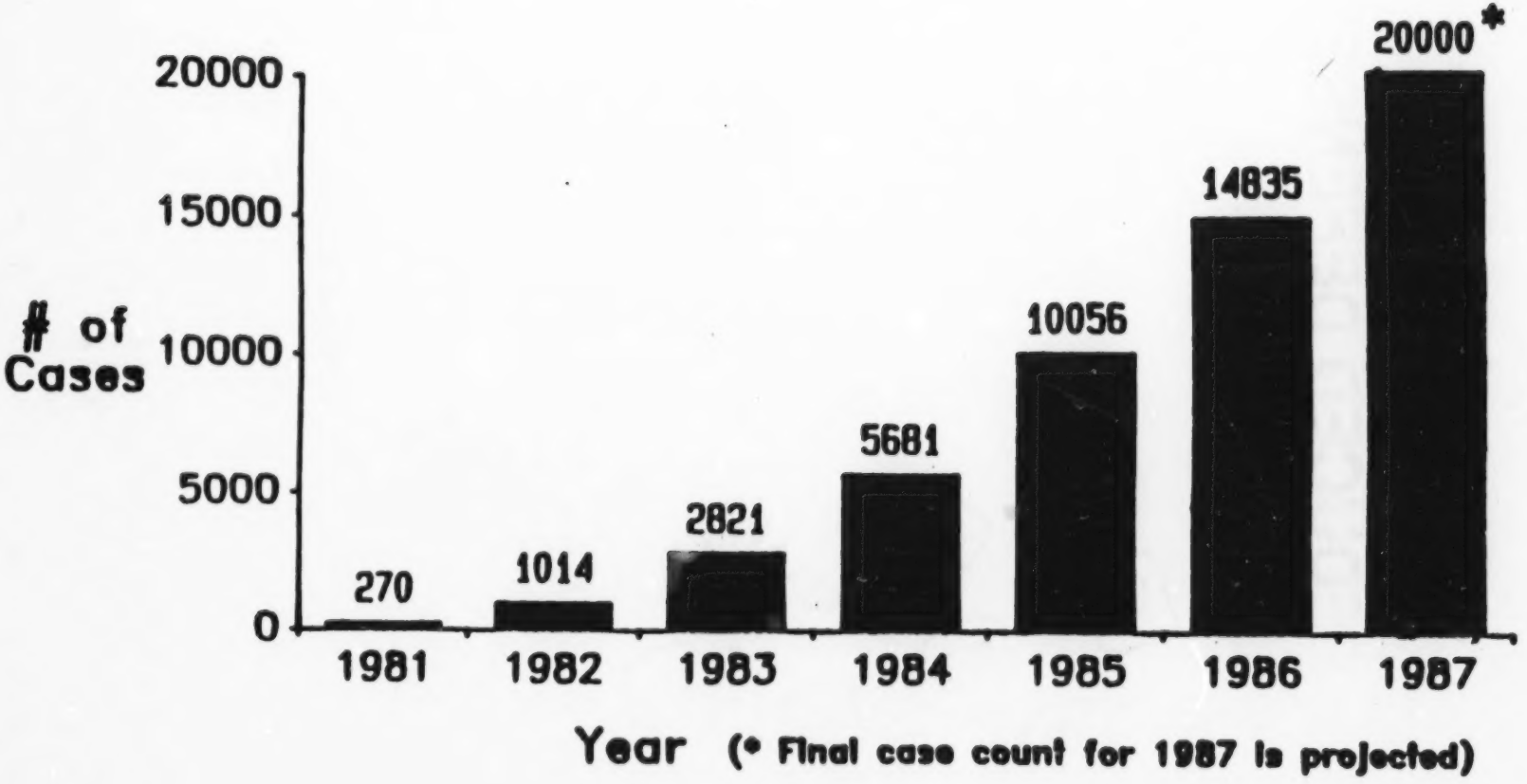
Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

# REDUCED DEFENSES




Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

# Cases of AIDS reported in the U.S., 1981 – 1987

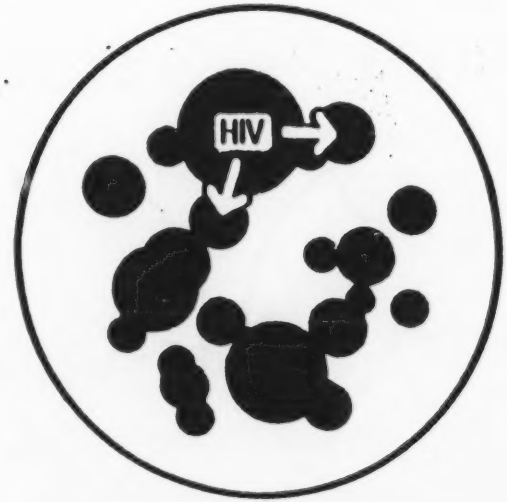





Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

# HIV is spread by:

**SEXUAL CONTACT WITH AN INFECTED PERSON**



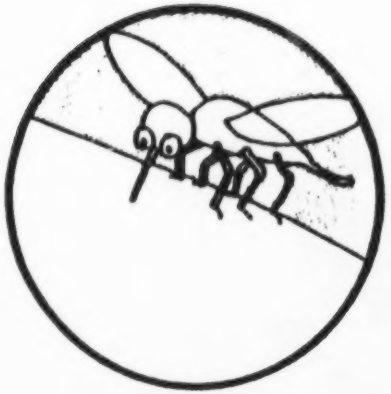

**INFECTED BLOOD**

**FROM INFECTED MOTHER TO FETUS/NEWBORN**

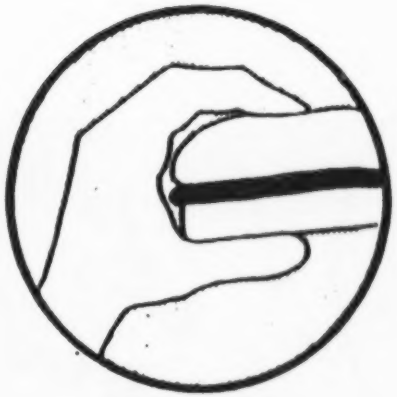
Reproduced from AIDS, The Preventable Epidemic with permission of the Oregon State Health Division

# HIV is not spread by:

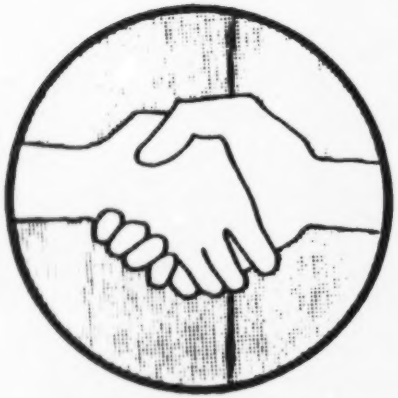
COUGHS/
SNEEZES



INSECTS



FOOD
HANDLERS



HANDSHAKES,
HUGS

# ...casual contact

Reproduced from AIDS, The Preventable Epidemic with permission of the Oregon State Health Division

# Preventive Measures: Sex

ABSTINENCE

MONOGAMY

234

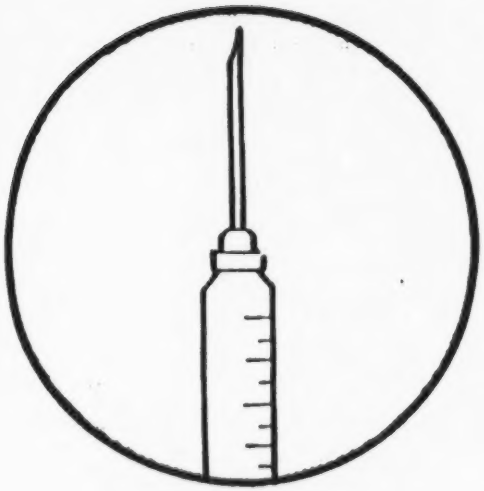
235



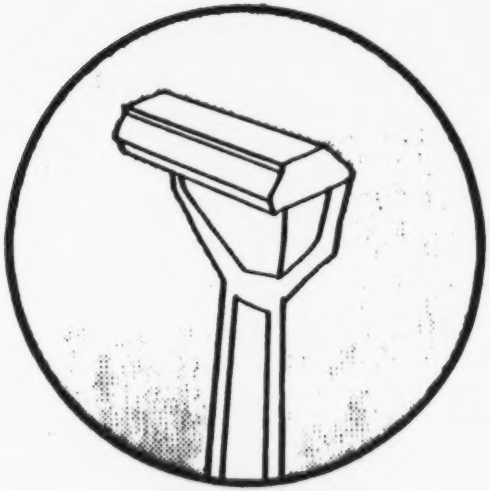
Reproduced from AIDS: The Facts Speaking with permission of the Oregon State Health Division

# Preventive Measures: Blood

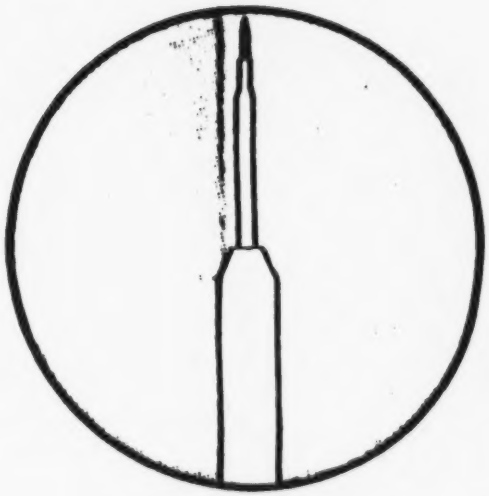
## DON'T SHARE...



NEEDLES



RAZORS



TATTOO INSTRUMENTS

Reproduced from AIDS: The Preventable Epidemic with permission of the Oregon State Health Division

# TEACHER INFORMATION

**AIDS: THE PREVENTABLE EPIDEMIC**
**GRADES 6-8**

**OBJECTIVE:**

The learner will demonstrate the ability to comprehend the high, low and no risk behaviors pertaining to HIV transmission.

**MATERIALS:**

Risk Assessment Survey, Pages

**VOCABULARY:**

Abstinence, monogamy, sexual contact, masturbation, condom

**PROCEDURES:**

1. As a review, ask students to quiz each other on the definitions for the categories listed on the Student Fact Sheet they received in the previous lesson.

2. Write **HIGH RISK** on the board or overhead. Ask students to explain what high risk means and examples of high risk behaviors.

3. Involve students in a brief discussion about why people engage in high risk activity.

4. Explain to students that the purpose of today's lesson is to move away from the factual information and begin to personalize the impact of the epidemic. Tell the class that the one way to prevent AIDS and infection with HIV is to be able to understand what puts one at risk for becoming infected and if at risk, changing that behavior to prevent infection.

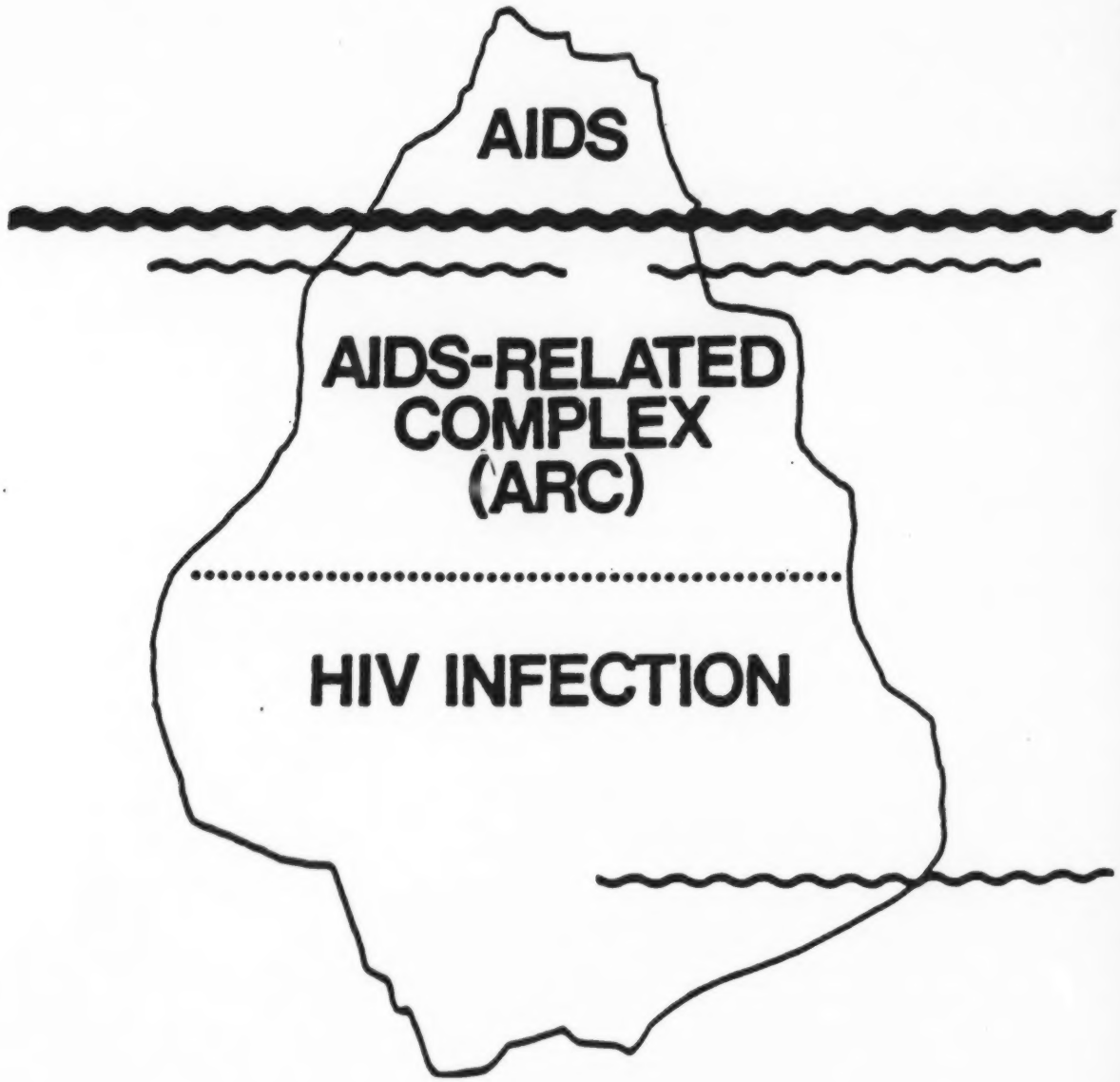
5. Assign the risk factor worksheet to be completed by small groups. Go over terminology as needed. Each group member will be expected to identify high, low and no risks and provide justification for his or her answer. Groups will then present their ideas to the rest of the class.

6. Go over answers with the class involving ideas from all of the groups.

7. Ask students to provide ways infections can be broken through behavior change. Explain to students that by using this knowledge, they can discover ways to change high risk behaviors. Based on the groups' answers on the risk survey, tell them to prepare proposals for behavior change on each item of medium to high risk. Each group will share one prevention proposal with the rest of the class.

Reproduced from AIDS: The Preventable Epidemic, with permission of the Oregon State Health Division

# HIV INFECTION "ICEBERG"






Reproduced from AIDS: The Personalized Epidemic with permission of the Oregon State Health Division

## SIXTH GRADE

GOAL II: Identify the methods of preventing, treating, and controlling diseases.

| STUDENT OUTCOMES | POSSIBLE ACTIVITIES | TEACHER NOTES AND RESOURCES |
|---|---|---|
| Students will:<br><br>1. Review and practice decision-making skills. | 1. Using existing curriculum materials (thinking skills, drug and alcohol abuse prevention, "Skills for Adolescence", and guidance) the teacher will provide practice in decision-making skills.<br><br>2. Students will complete a risk-assessment survey. (Teacher Information pp. 151-156)<br><br>3. Students will discuss and practice ways to say "no". (Teacher Information pp. 157-161) | |